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NORTHEASTERN UNIVERSITY



Catalogs of

COLLEGE OF LIBERAL ARTS

COLLEGE OF ENGINEERING

COLLEGE OF BUSINESS ADMINISTRATION

SCHOOL OF LAW

SCHOOL OF BUSINESS

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

LINCOLN TECHNICAL INSTITUTE

LINCOLN PREPARATORY SCHOOL

HUNTINGTON SCHOOL FOR BOYS

Northeastern University

COLLEGE OF LIBERAL ARTS

1943-1944



(CO-EDUCATIONAL)

BOSTON, MASSACHUSETTS

January, 1943

GIFTS AND BEQUESTS

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program
- (b) For general endowment
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University".



RICHARDS HALL

NORTHEASTERN UNIVERSITY

College of Liberal Arts

Conducted on the Co-operative Plan

Catalogue

1943-1944

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Division A—Freshman Calendar, 1943-1944

1943

MAY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑬	17	18	19	20	21	22
⑳	24	25	26	27	28	29
⑳	⑳					

JUNE

S	M	T	W	T	F	S
		1	2	3	4	5
⑥	7	8	9	10	11	12
⑬	14	15	16	⑬	18	19
⑳	21	22	23	24	25	26
⑳	⑳	⑳	⑳			

JULY

S	M	T	W	T	F	S
				①	②	③
④	⑤	6	7	8	9	10
⑪	12	13	14	15	16	17
⑱	19	20	21	22	23	24
⑳	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
①	2	3	4	5	6	7
⑧	9	10	11	12	13	14
⑱	16	17	18	19	20	21
⑳	23	24	25	26	27	28
⑳	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	⑥	7	8	9	10	11
⑱	⑱	⑱	⑱	⑱	⑱	⑱
⑱	20	21	22	23	24	25
⑳	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
③	4	5	6	7	8	9
⑩	11	⑬	13	14	15	16
⑱	18	19	20	21	22	23
⑳	25	26	27	28	29	30
⑳						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
⑦	8	9	10	⑪	12	13
⑭	15	16	17	18	19	20
⑳	22	23	24	⑳	⑳	⑳
⑳	29	30				

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑱	13	14	15	16	17	18
⑱	20	21	22	⑳	⑳	⑳
⑳	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑱	⑱	⑱	⑱	⑱	⑱	⑱
⑱	⑱	⑱	⑱	⑱	⑱	⑱
⑳	⑳					

Days on which college exercises are held are shown thus: 1 2 3

Sundays, holidays, and vacations are shown thus: ① ② ③

Division B—Freshman Calendar, 1943-1944

1943

JULY

S	M	T	W	T	F	S
				①	②	③
④	⑤	⑥	⑦	⑧	⑨	⑩
⑪	12	13	14	15	16	17
⑮	19	20	21	22	23	24
⑳	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
①	2	3	4	5	6	7
⑧	9	10	11	12	13	14
⑮	16	17	18	19	20	21
⑳	23	24	25	26	27	28
㉑	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	⑥	⑦	⑧	⑨	⑩	⑪
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	25
⑳	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
③	4	5	6	7	8	9
⑩	11	⑫	13	14	15	16
⑮	18	19	20	21	22	23
⑳	25	26	27	28	29	30
㉑						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
⑦	8	9	10	⑪	12	13
⑭	15	16	17	18	19	20
⑰	22	23	24	⑳	26	27
㉑	29	30				

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	⑰	⑱	⑳	㉑	㉒	㉓
㉔	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑮	17	18	19	20	21	22
㉑	24	25	26	27	28	29
㉒	31					

FEBRUARY

S	M	T	W	T	F	S
		1	2	3	4	5
⑥	7	8	9	10	11	12
⑬	14	15	16	17	18	19
㉑	21	㉒	23	24	25	26
㉓	28	29				

MARCH

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	25
㉑	㉒	㉓	㉔	㉕	㉖	

Days on which college exercises are held are shown thus: 1 2 3

Sundays, holidays, and vacations are shown thus: ① ② ③

Upperclass Calendar, 1943-1944

1943

APRIL

S	M	T	W	T	F	S
				1	2	3
(4)	5	6	7	8	9	10
(11)	12	13	14	15	16	17
(18)	(19)	20	21	22	23	24
(25)	26	27	28	29	30	

MAY

S	M	T	W	T	F	S
						1
(2)	3	4	5	6	7	8
(9)	10	11	12	13	14	15
(16)	17	18	19	20	21	22
(23)	24	25	26	27	28	29
(30)	(31)					

JUNE

S	M	T	W	T	F	S
			1	2	3	4
						5
(6)	7	8	9	10	11	12
(13)	14	15	16	(17)	18	19
(20)	(21)	(22)	(23)	(24)	(25)	(26)
(27)	(28)	(29)	(30)			

JULY

S	M	T	W	T	F	S
				(1)	(2)	(3)
(4)	(5)	6	7	8	9	10
(11)	12	13	14	15	16	17
(18)	19	20	21	22	23	24
(25)	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
(1)	2	3	4	5	6	7
(8)	9	10	11	12	13	14
(15)	16	17	18	19	20	21
(22)	23	24	25	26	27	28
(29)	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
(5)	(6)	7	8	9	10	11
(12)	13	14	15	16	17	18
(19)	20	21	22	23	24	25
(26)	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
(3)	4	5	6	7	8	9
(10)	11	(12)	13	14	15	16
(17)	18	19	20	21	22	23
(24)	25	26	27	28	29	30
(31)						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
(7)	8	9	10	(11)	12	13
(14)	15	16	17	18	19	20
(21)	22	23	24	(25)	26	27
(28)	29	30				

Days on which Division A students are in college are shown thus: 1 2 3

Days on which Division B students are in college are shown thus: **1 2 3**

Sundays, holidays, and vacations are shown thus: (1) (2) (3)

Upperclass Calendar, 1943-1944

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	⑮
⑳	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
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②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑮	17	18	19	20	21	22
⑳	24	25	26	27	28	29
㉑	31					

FEBRUARY

S	M	T	W	T	F	S
		1	2	3	4	5
⑥	7	8	9	10	11	12
⑬	14	15	16	17	18	19
⑳	21	㉒	23	24	25	26
㉓	28	29				

MARCH

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	25
⑳	27	28	29	30	31	

APRIL

S	M	T	W	T	F	S
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②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑮	17	18	⑮	20	21	22
㉓	24	25	26	27	28	29
㉕						

MAY

S	M	T	W	T	F	S
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⑦	8	9	10	11	12	13
⑮	15	16	17	18	19	20
㉒	22	23	24	25	26	27
㉔	29	㉕	31			

JUNE

S	M	T	W	T	F	S
				1	2	3
④	5	6	7	8	9	10
⑮	12	13	14	15	16	⑮
⑮	⑮	⑮	⑮	⑮	⑮	㉔
㉕	㉕	㉕	㉕	㉕	㉕	㉕

Days on which Division A students are in college are shown thus: 1 2 3

Days on which Division B students are in college are shown thus: 1 2 3

Sundays, holidays, and vacations are shown thus: ① ② ③

Calendar for the College Year, 1943-1944

1943

- APRIL 12 *Monday*. Opening of college for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- APRIL 17 *Saturday*. Entrance condition examinations.
- APRIL 19 *Monday*. Patriots' Day. (College exercises omitted.)
- MAY 3 *Monday*. Registration and opening of college year for Division A freshmen. Students failing to register promptly on May 3rd will be charged a late registration fee of five dollars (\$5.00).
- MAY 31 *Monday*. Observation of Memorial Day. (College exercises omitted.)
- JUNE 21-26 Vacation for Division A upperclassmen.
- JUNE 23 *Wednesday*. Entrance condition examinations.
- JUNE 24 *Thursday*. Entrance condition examinations.
- JUNE 28 *Monday*. Co-operative work period begins for Division A upperclassmen.
- JUNE TO JULY 28 } Vacation for Division B upperclassmen and for
5 } Division A freshmen.
- JULY 6 *Tuesday*. Opening of college for Division B upperclassmen.
- JULY 12 *Monday*. Registration and opening of college year for Division B freshmen. Students failing to register promptly on July 12 will be charged a late registration fee of five dollars (\$5.00).
- SEPTEMBER 6 *Monday*. Labor Day. (College exercises omitted.)
- SEPTEMBER 6-11 Vacation for Division B freshmen.

- SEPTEMBER 13 *Monday*. Second semester begins for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- SEPTEMBER 13-18 Vacation for Division A freshmen.
- SEPTEMBER 20 *Monday*. Second semester begins for Division A freshmen.
- OCTOBER 12 *Tuesday*. Columbus Day. (College exercises omitted.)
- NOVEMBER 11 *Thursday*. Armistice Day. (College exercises omitted.)
- NOVEMBER 22 *Monday*. Second semester begins for Division B upperclassmen and Division B freshmen. Co-operative work period begins for Division A upperclassmen.
- NOVEMBER 24 *Wednesday*. College exercises omitted after 1:00 p.m.
- NOVEMBER 25 *Thursday*. Thanksgiving Day. (College exercises omitted.)
- DECEMBER 20-25 Vacation for Division B freshmen.
- DECEMBER 24 *Friday*. College exercises omitted after 1:00 p.m.
- DECEMBER 25 *Saturday*. Christmas. (College exercises omitted.)

1944

- JANUARY 1 *Saturday*. New Year's Day. (College exercises omitted.)
- JANUARY 30 *Sunday*. Baccalaureate and Commencement.
- JANUARY 31 *Monday*. Opening of new College year for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- FEBRUARY 22 *Tuesday*. Washington's birthday. (College exercises omitted.)
- APRIL 10 *Monday*. Opening of college year for Division B upperclassmen. Co-operative work period begins for Division A upperclassmen.

The Northeastern University Corporation

ROBERT GRAY DODGE
Chairman

FRANK LINCOLN RICHARDSON
Vice-Chairman

GALEN DAVID LIGHT
Secretary and Treasurer

CARL STEPHENS ELL
President of the University

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CHARLES FRANCIS ADAMS
WILMAN EDWARD ADAMS
ROGER AMORY
HENRY NATHANIEL ANDREWS
ROBERT BALDWIN
ARTHUR ATWOOD BALLANTINE
GEORGE LOUIS BARNES
THOMAS PRINCE BEAL
FARWELL GREGG BEMIS
HENRY GODDARD BRADLEE
GEORGE AUGUSTUS BURNHAM
GODFREY LOWELL CABOT
PAUL CODMAN CABOT
WINTHROP L. CARTER
WALTER CHANNING
WILLIAM CONVERSE CHICK
EVERETT AVERY CHURCHILL
PAUL FOSTER CLARK
SEARS B. CONDIT
ALBERT MORTON CREIGHTON
WILLIAM JAMES DAVIDSON
PAUL AUGUSTUS DRAPER
CHARLES FRANCIS EATON
WILLIAM PARTRIDGE ELLISON
JOSEPH BUELL ELY
JOHN WELLS FARLEY
FREDERIC HAROLD FAY
ALLAN FORBES
EDWARD J. FROST
FRANKLIN WILE GANSE
HARVEY DOW GIBSON
MERRILL GRISWOLD
HENRY INGRAHAM HARRIMAN
CHANDLER HOVEY
WESTON HOWLAND
HOWARD MUNSON HUBBARD
MAYNARD HUTCHINSON
ARTHUR STODDARD JOHNSON
FRANK HOWARD LAHEY
HALFDAN LEE

EDWARD ABBOTT MACMASTER
JOHN RUSSELL MACOMBER
GEORGE ARTHUR MALLION
JOSEPH PATRICK MANNING
ALBERT EDWARD MARSHALL
HAROLD FRANCIS MASON
JAMES FRANKLIN McELWAIN
HUGH DEAN McLELLAN
FRED LESTER MORGAN
IRVING EDWIN MOULTROP
CLARENCE LUCIAN NEWTON
SAMUEL NORWICH
OLAF OLSEN
AUGUSTIN HAMILTON PARKER, JR.
GEORGE EDWIN PIERCE
ROGER PIERCE
MATTHEW POROSKY
FREDERICK SANFORD PRATT
ROGER PRESTON
HARRY WENDELL PROUT
SIDNEY RABINOVITZ
STUART CRAIG RAND
JAMES LORIN RICHARDS
CHARLES MILTON ROGERSON
ROBERT BILLINGS RUGG
LEVERETT SALTONSTALL
RUSSELL MARYLAND SANDERS
ANDREW SEBASTIAN SEILER
FRANK PALMER SPEARE
RUSSELL HENRY STAFFORD
FRANCIS ROBERT CARNEGIE STEELE
CHARLES STETSON
EARL PLACE STEVENSON
ROBERT TREAT PAINE STORER
FRANK HORACE STUART
EDWARD WATSON SUPPLE
RALPH EMERSON THOMPSON
ELIOT WADSWORTH
EUSTIS WALCOTT
EDWIN SIBLEY WEBSTER
SINCLAIR WEEKS

General University Committees

Executive Council

CARL STEPHENS ELL, *Chairman*

EVERETT AVERY CHURCHILL

GALEN DAVID LIGHT

University Cabinet

CARL STEPHENS ELL, *Chairman*

ROBERT BRUCE

WINTHROP ELIOT NIGHTINGALE

EVERETT AVERY CHURCHILL

EDWARD SNOW PARSONS

*WILLIAM THOMAS CLONEY, JR.

JOHN BUTLER PUGSLEY

CHARLES WILLIAM HAVICE

CHARLES HENRY SAMPSON

WILFRED STANLEY LAKE

MILTON JOHN SCHLAGENHAUF

JAMES WALLACE LEES

SYDNEY KENNETH SKOLFIELD

GALEN DAVID LIGHT

J. KENNETH STEVENSON

HAROLD WESLEY MELVIN

WILLIAM CROMBIE WHITE

RUSSELL WHITNEY

FRANK GIVEN AVERILL, *Secretary*

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EVERETT AVERY CHURCHILL, *Chairman*

JAMES WALLACE LEES

WILLIAM CROMBIE WHITE

GALEN DAVID LIGHT

RUSSELL WHITNEY

Library Committee

EVERETT AVERY CHURCHILL, *Chairman*

ROBERT BRUCE

MYRA EDNA WHITE

WILFRED STANLEY LAKE

WILLIAM CROMBIE WHITE

RUSSELL WHITNEY

*On Military Leave of Absence.

General Officers of the University

President

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D.
Office 186 Richards Hall Res. 21 Beaumont Avenue, Newtonville

President Emeritus

FRANK PALMER SPEARE, M.H., LL.D.
Res. 280 Beacon Street, Boston

Vice President

EVERETT AVERY CHURCHILL, A.B., Ed.D.
Office 138 Richards Hall Res. 50 Follen Street, Cambridge

Secretary-Treasurer

GALEN DAVID LIGHT, A.B.
Office 115 Richards Hall Res. 3 Preble Gardens Road, Belmont

Officers of the Day Colleges

Director of Day Colleges and Dean of the College of Engineering

WILLIAM CROMBIE WHITE, S.B., Ed.M.
Office 152 Richards Hall Res. 30 Summit Road, Wellesley

Acting Dean of the College of Business Administration

ROBERT BRUCE, B.C.S., M.C.S.
Office 352 East Building Res. 12 Elliott Street, Winthrop

Dean of Chapel

CHARLES WILLIAM HAVICE, A.B., M.A., S.T.B., Ph.D.
Office 357 Richards Hall Res. 178 Goden Street, Belmont

Dean of the College of Liberal Arts

WILFRED STANLEY LAKE, A.B., M.A., Ph.D.
Office 452 East Building Res. 59 Hinckley Road, Waban

Dean of Students

HAROLD WESLEY MELVIN, A.B., M.A.
Office 256 Richards Hall Res. 44 Houston Avenue, Milton

Secretary of the Faculty

RUDOLPH MAGNUS MORRIS, S.B., Ed.M.
Office 153 Richards Hall Res. 99 Knollwood Road, Squantum

Director of Co-operative Work

WINTHROP ELIOT NIGHTINGALE, A.B., S.B., Ed.M.
Office 253 Richards Hall Res. 136 Dickerman Road, Newton Highlands

Director of Student Activities

EDWARD SNOW PARSONS, S.B., Ed.M.
Office 355 Richards Hall Res. 19 Hardy Avenue, Watertown

Registrar

JOHN BUTLER PUGSLEY, A.B.
Office 254 Richards Hall Res. 23 Hardy Avenue, Watertown

Director of Admissions

MILTON JOHN SCHLAGENHAUF, A.B., B.D., M.A.
Office 150 Richards Hall Res. 96 Blakely Road, Medford
Telephone Mystic 6148-M

Administrative Staff

FRANK GIVEN AVERILL, A.B. Office 139 Richards Hall	Assistant Secretary of the University Res. 90 Fairbanks Avenue, Wellesley Hills
A. RIAMIA CRAWFORD Library, East Building	Assistant Librarian Res. 17 Webster Street, East Lynn
ALBERT ELLSWORTH EVERETT, S.B., M.B.A. Office 253 Richards Hall	Co-ordinator of Co-operative Work Res. 4 Crown Street, Auburndale
DAISY MILNE EVERETT Office 115 Richards Hall	Assistant Treasurer Res. 1111 Highland Avenue, Needham Heights
GEORGE RAYMOND FENNELL, S.B., M.B.A. Office 150 Richards Hall	Assistant Director of Admissions Res. 42 Fremont Avenue, Everett Telephone Everett 1172-W
ALBERT WAYLAND FLETCHER, A.B. Office 154 Richards Hall	Co-ordinator of E. S. M. W. T. Res. 22 Pilgrim Road, Arlington
MARY B. FOOR Office 41 Richards Hall	Manager of Bookstore Res. 32 Milton Road, Brookline
FREDERICK ROBERT HENDERSON, S.B., M.S. Office 154 Richards Hall	Director of E. S. M. W. T. Res. 33 Mayo Road, Wellesley
CYNTHIA WORT KING Library, East Building	Assistant Librarian Res. 82 Thorndike Street, Brookline
DR. GEORGE M. LANE Office 279 Marlborough Street	College Physician Res. 21 Alton Court, Brookline
DONALD HERSHEY MACKENZIE, S.B., Ed.M. Office 355 Richards Hall	Assistant to the Director of Student Activities Res. 34 Exeter Street, Wollaston
JOHN CHRISTIE MORGAN, S.B., M.B.A. Office 253 Richards Hall	Co-ordinator of Co-operative Work Res. 24 Walker Street, Newtonville
VERNER OLOF NELSON Office 252 Richards Hall	Co-ordinator of Co-operative Work Res. 276 Dedham Avenue, Needham
RUDOLF OSCAR OBERG, S.B., Ed.M. Office 253 Richards Hall	Alumni Executive Secretary Res. 37 Walker Street, Atlantic
ELLIS MERTON PURINTON, B.B.A. Office 253 Richards Hall	Co-ordinator of Co-operative Work Res. 7 Clark Avenue, Beverly
J. KENNETH STEVENSON, B.C.S. Office 136 Richards Hall	Assistant to the Vice-President Res. 101 Goden Street, Belmont
GEORGE WESLEY TOWLE, S.B. Office 253 Richards Hall	Co-ordinator of Co-operative Work Res. 23 Hilltop Avenue, Lexington
GRACE LISCOM WATKINS Library, East Building	Assistant Librarian Res. 76 Glendale Street, Dorchester
MYRA EDNA WHITE Library, East Building	Librarian Res. 118 Hemenway Street, Boston

Office and Secretarial Staff

FLORENCE BURTON AVELLAR Secretary to the Treasurer of the University—116R	327 Huntington Avenue, Boston
MABEL ELLEN BEAN Secretary to the Assistant to the Vice President—136R	61 Quint Ave., Allston
BETTY E. BINKLEY Registrar's Office—254R	202 Arborway, Jamaica Plain
BARBARA JEAN BURT Co-operative Work Office—253R	151 Blue Hill Ave., Milton
FLORENCE D. CARLSON Secretary to the Director of Student Activities—355R	10 Pearl St., Dedham
ETHEL CARTER CROWELL Secretary, Central Offices of the University	9 Norway St., Boston

VIRGINIA CUSHING DARLING <i>Purchasing Clerk, Treasurer's Office</i>	128 Chestnut St., Boston
CAROL DESGRANGES <i>Admissions Office—150R</i>	505 Beacon St., Boston
ELEANOR MADELINE DUNN <i>Secretary, ESMWT Office—154R</i>	378 North Ave., Weston
THELMA GERTRUDE DUNN <i>Bookkeeper, Treasurer's Office</i>	30 Freeman Place, Needham
RUTH PHILLIPS FIOTT <i>Admissions Office—151R</i>	173 Marianna St., East Lynn
MILDRED CURTIS GARFIELD <i>Financial Secretary to the Director of Day Colleges—152R</i>	87 St. Stephen St., Boston
EDNA JANE GARRABRANT <i>Secretary to the Director of Co-operative Work—253R</i>	8 Maynard St., Arlington
BARBARA MARY GREIM <i>Admissions Office—151R</i>	57 Grandview Rd., Arlington
JANE MCFARLAND HUTCHINS <i>Student Union Office—357R</i>	194 Beacon St., Boston
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Res. 276 Dedham Ave., Needham
Instructor in English
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GOVERNOR OF THE COMMONWEALTH
"Massachusetts at War"

ROBERT P. TRISTRAM COFFIN
AUTHOR, LECTURER
"What Poems Are"

J. ANTON DE HAAS
PROFESSOR OF INTERNATIONAL RELATIONSHIPS, HARVARD UNIVERSITY
"Can We Defeat Japan?"

CHANNING H. COX
PRESIDENT, OLD COLONY TRUST COMPANY
"Target for Tonight"

ARNOLD WOLFERS
PROFESSOR OF INTERNATIONAL RELATIONS, YALE UNIVERSITY
"The Grand Strategy of the Axis"

G. BROMLEY OXNAM
BISHOP, METHODIST CHURCH
"A Date with the World"

CLAYTON F. MUGRIDGE
MANAGER, INDUSTRIAL RELATIONS, EAGLE PENCIL COMPANY
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HUBERT HERRING
AUTHOR, LECTURER, TRAVELER
"The Caribbean Danger Zone"

GEORGE H. EDGELL
DIRECTOR, BOSTON MUSEUM OF FINE ARTS
"Recent Museum Accessions"

WILLIAM MATHER LEWIS
PRESIDENT, LAFAYETTE COLLEGE
"A Broader Conception of National Defense"

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"The American Way"

EDWARD A. WEEKS, JR.
EDITOR, THE ATLANTIC MONTHLY
"An Editor Faces an Angry World"

JAMES L. McCONAUGHY
PRESIDENT, WESLEYAN UNIVERSITY
"Lessons from Lincoln"

CHANNING POLLOCK
PLAYWRIGHT, AUTHOR
"Is the Fault in Our Stars?"

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NORTHEASTERN UNIVERSITY

General Statement

NORTHEASTERN UNIVERSITY is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) an Executive Committee which serves as an Ad Interim Committee between the regular meetings of the Board of Trustees and has general supervision of the financial and educational policies of the University; (b) a Committee on Housing which has general supervision over the buildings and equipment of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Development Committee which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University, from the outset, had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

With respect to program, Northeastern has limited itself:

- To offering, in its several schools, basic curricula from which non-essentials have been eliminated,
- To effective teaching,
- To advising and guiding students,
- To giving students the chance to build well-rounded personalities through a balanced program of extra-curricular activities.

The Northeastern Plan of Education is especially designed for the student who must earn while he learns. In the main, it consists of two definite types of education:

- Co-operative Education by Day,
- Adult Education by Night.

The plan has been developed in such a way that experience in jobs with pay is utilized to help boys of limited financial resources secure an education and at the same time gain the maximum

educational benefit from their practical experience. So far as the New England States are concerned, Northeastern University is the only institution whose day colleges, other than the School of Law, are conducted under the Co-operative Plan.

The several schools and programs of the University are operated either under the name "Northeastern University" or by its affiliated schools—the Lincoln Schools and The Huntington Day School for Boys. The following is a brief outline of the principal types of educational opportunities offered.

1. In the field of Co-operative Education there are three day colleges — the College of Liberal Arts, the College of Engineering, and the College of Business Administration. All of these colleges offer five-year curricula. The College of Liberal Arts offers majors in the usual fields of the arts and the sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. The College of Engineering, one of the largest engineering colleges in the United States, has curricula in Civil, Mechanical (with Aeronautical option), Electrical, Chemical, and Industrial Engineering. The College of Business Administration has curricula in Accounting, Marketing and Advertising, and Industrial Administration. The College of Engineering and the College of Business Administration confer the degree of Bachelor of Science with specification indicating the field of specialization. The Co-operative Plan under which all of these day colleges operate enables the student to alternate regular periods of classroom instruction with supervised employment in an industrial or commercial position, thus combining theory and practice in an exceedingly effective manner. Apart from the educational advantages of the Co-operative Plan is the opportunity for self-support while the student is pursuing his studies at Northeastern University. During the co-operative periods, students not only gain experience but are also paid for their services. Approximately three hundred business and industrial concerns co-operate with Northeastern University in making this program effective.
2. The School of Law conducts both a day and an evening undergraduate program, each program preparing for admission to the bar and for the practice of the law and leading to the degree of Bachelor of Laws.
3. The Adult Education Program has been developed in the evening work of the School of Law as indicated above, in the School of Business, and in the evening courses of the College of Liberal Arts. The School of Business has curricula in Management, Accounting, and Engineering and

Management. The School awards the Bachelor of Business Administration degree with specification. A division of the School of Business is also conducted in Springfield. The College of Liberal Arts offers certain of its courses constituting a program, three years in length, the equivalent in hours to one-half of the requirements for the A.B. or S.B. degree, providing a general education and preparation for admission to the School of Law. The title of Associate in Arts is conferred upon those who complete this program.

4. The Adult Education Program has also been developed through the Lincoln Schools, which are affiliated with and conducted by Northeastern University. The classes in these schools are held at convenient evening hours. The Lincoln Technical Institute offers curricula upon a college level in various phases of engineering leading to the title of Associate in Engineering; whereas the Lincoln Preparatory School, accredited by the New England College Entrance Certificate Board, prepares students for admission to college and offers other standard high school programs.
5. The Huntington Day School for Boys, also affiliated with and conducted by Northeastern University, is the outgrowth of a demand in the city of Boston for an urban preparatory school with high educational standards which would furnish thorough preparation for admission to the leading colleges and universities. While easily accessible to the various sections of Boston and to the suburbs, it has the facilities of a country day school and offers a country day school program. This School is one of the leading preparatory schools of the country.

Northeastern University and Affiliated Schools
Including War Courses
 Statistical Summary
 1941-1942

	Administrative and Instructional Staff	Enrollment
General Administration	9	
Northeastern University		
College of Liberal Arts		
Day	66	508
Evening	16	169
College of Engineering	90	1659
College of Business Administration	48	638
School of Business	113*	1634*
School of Law	35*	391*
Affiliated Schools		
Lincoln Technical Institute	46	962
Lincoln Preparatory School	22	583
Huntington Day School for Boys	15	155
Huntington Summer School	10	133
	<u>470</u>	<u>6832</u>
Less Duplicates	143	306
	327	6526
War Courses		
Civilian Pilot Training Program	4	81
Engineering Defense Program	109	1881
	<u>113</u>	<u>1962</u>
Less Duplicates	1	16
	439	8472
Less Duplicates between War Courses and Schools and Colleges	37	76
Different Number	<u>402</u>	<u>8396</u>

*These figures include the administrative officers, faculties, and students of the Divisions of the University in Worcester, Springfield, and Providence.

The Co-operative Plan

How It Works

THE co-operative plan works in the following manner. Upper-classmen are divided into two nearly equal groups, one of which is called Division A and the other Division B. Each man is assigned a job with some business or industrial concern. So far as possible each man in one Division is paired with a man in the other Division, so that the two, by taking turns, may occupy one job throughout the entire year. The Division A student starts the college year with ten weeks of classroom work, while the Division B student starts his year with a term at co-operative work. At the end of that term the Division A student goes out to work with a co-operating firm, while his place in the classroom is then taken by his *alternate*, the corresponding Division B student. When ten weeks more have passed, the Division A man returns to college, and the Division B man returns to the co-operative job. The alternation of work and classroom study continues throughout the year so that an upperclassman has annually two terms at college, two terms at co-operative work, and a brief vacation.

Faculty Co-ordinators

Students are assigned to a co-ordinator, who interviews them periodically during their freshman year for the purpose of determining their background, abilities, temperaments, and aptitudes. During these interviews the co-ordinator discusses various fields of activity and answers such questions as the students may have in regard to the many phases of business and industry. Each student is studied in the light of his physical condition, scholastic ability, and other factors affecting his probable success in vocational life. These interviews culminate in an agreement between the student and his co-ordinator regarding the field of co-operative work in which the student is to be placed. During his upperclass years the student continues to have frequent conferences with his co-ordinator regarding vocational adjustments and personal problems. In this way the progress of every student is observed and co-ordinated with his college work to the end that he may obtain maximum values from his training at Northeastern.

Placement

The co-ordinator visits co-operating firms and arranges with them for the employment of the students under his charge. The range of opportunities available to Northeastern students is wide,

including practically all phases of industrial life. As a general rule, sophomores are placed upon routine and laborious jobs through which they may prove their fitness for more responsible work. The jobs upon which Northeastern students are employed are in no sense protected opportunities. They are regular jobs under actual business conditions and are held in competition with other sources of supply. The only special privilege accorded Northeastern students is that of attending college on the co-operative plan. The University expects every student to stand on his own feet while he is on co-operative work, and advancement to the more responsible jobs is based entirely upon merit.

Supervision and Guidance

While the University does not adopt a paternal attitude toward co-operative work, it nevertheless assumes certain responsibilities toward students and co-operating firms. Co-ordinators visit each job in order that the employer may report upon the student's achievement and that necessary adjustments may be made. Co-ordinators supervise the assignment of students to various jobs and in conjunction with employers arrange for promotions and training schedules. Problems that arise on co-operative work are adjusted by common agreement of co-ordinator, student, and employer. In the event of special difficulties or dissatisfaction, the case may be adjusted by the Committee on Co-operative work, which comprises several members of the faculty.

Through a series of co-operative work reports prepared during their working periods, students are led to analyze their jobs and to develop a thoughtful and investigative attitude toward their working environment. A most important phase of co-operative work is the opportunity afforded for guidance by the frank discussion of actual problems encountered on the job. The intimate contact between co-ordinator and student is of great worth in helping the student to get the most value from each co-operative work assignment. While the University endeavors to provide every possible opportunity for its students, it expects them at the same time to take the initiative and to assume the responsibility involved in their individual development. To every student are available the counsel and guidance of the faculty, and every resource at its disposal. But the faculty does not coerce students who are uninterested or unwilling to think for themselves.

The co-operative plan is thus designed specifically to provide actual working conditions which afford the student practical experience, give meaning to his program of study, and train him in reliability, efficiency, and team work.

Correlation of Theory and Practice

Co-operating companies employ the students in the various departments of their establishments. The training is thorough. To derive the greatest value from his co-operative work the student is advised to continue in the employ of his co-operating firm for at least one year after graduation, since certain types of work which would afford him valuable experience cannot be made available to him while he is alternating between work and study. Statistics compiled over a period of many years show that on the average about fifty per cent of each graduating class remain with co-operating employers after graduation.

Co-operative Work Reports

The values to be derived from practical experience are further enhanced by required report writing. These co-operative work reports are written during the working periods by all co-operative students. A complete job analysis is required as the first report written on any new co-operative work assignment. Subjects of other reports are selected by the student after conference with his Co-ordinator of Co-operative Work, by whom they must be approved. The reports are designed to encourage observation and investigation on the part of the students and to help them to appreciate more fully the extent and value of their experience. These reports are carefully read by the Co-ordinator and are discussed with the student during the following college period. Exceptionally valuable results are obtained from these reports. The value derived must necessarily be directly proportional to the conscientious and intelligent concentration of effort by the student upon this phase of the work.

Co-operative Work Records

Complete and detailed records are kept of the co-operative work of each student. They are based upon reports made by the employer at the end of each working period; upon occasional personal interviews between the employer and the Co-ordinator; and upon various evidences of the student's attitude toward all the phases of his co-operative work. It is not possible for the student to secure a degree unless this part of the curriculum is completed satisfactorily. These records of practical experience serve as a valuable future reference for the Alumni Placement Division of the Department.

Positions Available

Because of uncertainties of business conditions, as well as other reasons beyond its control, the University cannot and does not guarantee to place students. Although the University in no way discriminates among students of various races and religions, considerable difficulty has been experienced in placing at co-operative work the members of certain racial groups and students who are physically handicapped. However, past experience has demonstrated that students who are willing and capable of adapting themselves to existing conditions are almost never without employment except in periods of severe industrial depression.

Earnings

It should be understood that the primary purpose of the Co-operative Plan is training. For this reason the rates of pay for students tend to be low because students are given the privilege of attending college on the Co-operative Plan and because effort is made to provide the student with the opportunity of being transferred, at reasonable intervals, from one department to another of the co-operating company.

The minimum rate of pay will be governed to a very large extent by prevailing wages and hours laws. To assist the student in budgeting his expenses, however, he should plan in normal times on a weekly rate of pay equal to the minimum prevailing rates for the metropolitan Boston area.

Location of Work

It is the policy of the University to assign students to co-operative work within commuting distance of their homes. This is not always possible, however, and at times it may be necessary for students to live away from home in order to obtain satisfactory and desirable co-operative work assignments.

Types of Co-operative Work

Insofar as possible students are placed at co-operative work in that general field for which they express preference, provided that aptitude, physical ability, temperament, and other personal qualities appear to fit them for this field. Usually students are placed first in those jobs of an organization where they may learn the fundamental requirements of the business.

For example, a student interested in manufacturing might be started as an operative on some machine in the plant. As his progress and other conditions warranted he would be transferred to other types of work such as shipping, inspecting, cost finding, adjusting complaints, or bookkeeping, and so on, so that in the course of his four years co-operative training he would have the opportunity to acquire a substantial background in at least some of the functions of factory administration. This progressive type of training is more readily obtained in the employ of one company. A change of company each year provides more a change of environment than a progression of experiences.

Engineering firms, manufacturing companies, public utilities, and many other types of enterprises are employing Northeastern students. In some cases definite training schedules have been established so as to permit the student one full year in each of several important departments.

Typical Co-operative Training Schedules

These schedules are arranged with the basic idea of giving the student a comprehensive training through the several different departments, but must of necessity be varied in accordance with the needs of those departments.

BOSTON EDISON COMPANY

The schedule of the Boston Edison Company is divided into the following general classifications. Very few co-operating students obtain experience in all branches, but students progress from year to year in the respective branches as conditions require.

Standardizing

- (a) Testing and standardizing of electrical instruments
- (b) Miscellaneous standardization
- (c) Repairs on electrical instruments
- (d) Laboratory high voltage tests

Steam Practice

- (a) Turbine, engine and boiler tests
- (b) Instrument tests and repairs
- (c) Miscellaneous tests

Electrical Testing

- (a) Testing and repairing of electrical instruments in power stations and sub-stations
- (b) Cable tests
- (c) High voltage tests on apparatus and in the field
- (d) Checking up construction work
- (e) Miscellaneous electrical tests

Chemical Engineering

- (a) Fuel analysis
- (b) Miscellaneous tests and analysis of oils, water paints, and other materials

*Photography**Office Work*

HUNT-SPILLER MANUFACTURING CORPORATION

- ONE YEAR General laboratory and plant work, including preparation of samples
- Pyrometry
- Use and care of metallurgical apparatus
- ONE YEAR Complete analysis of coal, coke, limestone, sand, iron, soil, etc.
- ONE YEAR Keeping of general metallurgical records, filing, and making of reports
- ONE YEAR Analysis for combined, graphitic, and total carbon with a complete knowledge of a carbon combustion apparatus

PEPPERELL MANUFACTURING COMPANY

- ONE YEAR Stock Records
- ONE YEAR Production Analysis
- ONE YEAR Inventory Control

General Information

College Expenses

Tuition

THE tuition for all curricula in the Day Colleges is \$250 per year, or \$125 per term. Certain fees and deposits are also required as specified in the following paragraphs. A complete statement of tuition and fee payments is given on page 31.

Students who carry academic loads of greater or less than normal amount may pay their tuition on a semester hour basis.

University Fee

All students are charged a University Fee of twenty-four dollars (\$24) a college year. This fee for upperclassmen is payable in two installments: twelve dollars (\$12) with the first payment of tuition and twelve dollars (\$12) with the second payment of tuition. For freshmen it is payable fourteen dollars (\$14) with the first tuition payment and ten dollars (\$10) with the second tuition payment.

The University Fee covers library, laboratory, materials charges, and similar items for which separate fees are frequently charged by other colleges and universities. It is payable by all students regardless of the curriculum in which they are enrolled.

Student Activities Fee

Each student in the Day Colleges is charged a student activities fee of sixteen dollars (\$16), for upperclassmen payable one-half with each tuition payment and for freshmen payable entirely with the first tuition payment. This fee supports in part certain student activities, and includes membership in the *Northeastern University Athletic Association* and subscription to *The Northeastern News*, the college paper.

The services of a physician are also available for all students under this fee. Minor ailments are treated by the college health officers without additional charge. If the student shows signs of more serious illness, he is immediately advised to consult a specialist or return to his home, where he can get further treatment.

No student shall be required to pay more than sixty dollars (\$60) in fees (University and Student Activities) during any one calendar year.

Chemical Laboratory Deposit

(Applies only to students taking chemical and chemical engineering laboratory work)

All upperclassmen taking chemical or chemical engineering laboratory work are required to make a deposit of ten dollars

(\$10) at the beginning of each term from which deductions are made for breakage, chemicals, and destruction of apparatus in the laboratory. Freshmen taking chemistry make a chemical laboratory deposit of ten dollars (\$10) at the beginning of the year.

Any unused portion of this deposit will be returned to the student at the end of the college year. If the charge for such breakage, chemicals, or destruction of apparatus is more than the sum deposited, the student will be charged the additional amount.

Schedule of Payments for Freshmen

<i>Division A</i>	
<i>Date Due</i>	<i>Amount</i>
May 3, 1943	Tuition \$125.00
	Fees 30.00
	Chem. Lab. Deposit 10.00
	<hr/>
	\$165.00
September 20, 1943	Tuition \$125.00
	Fees 10.00
	<hr/>
	\$135.00
<i>Division B</i>	
July 12, 1943	Tuition \$125.00
	Fees 30.00
	Chem. Lab. Deposit 10.00
	<hr/>
	\$165.00
November 29, 1943	Tuition \$125.00
	Fees 10.00
	<hr/>
	\$135.00

Schedule of Payments for Upperclassmen

<i>Division A</i>	
*April 12, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00
*September 13, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00
<i>Division B</i>	
*July 6, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00
*November 22, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00

Deferred Payment Fee

There will be a \$2.00 deferred payment fee added to all bills which are not paid by the Saturday following the date on which

*Students taking chemical laboratory work pay a deposit of \$10 additional.

payments fall due. When further extensions of time are given on payments which have been previously deferred, an additional \$2.00 fee will be charged for each extension.

Failure to make the required payments on time, or to arrange for such payments, is considered sufficient cause to bar the student from classes or suspend him from co-operative work until the matter has been adjusted with the Registrar.

Late Registration Fee

A fee of \$5.00 will be charged for failure to register in accordance with prescribed regulations on the dates specified in the college calendar.

Graduation Fee

A fee of ten dollars (\$10) covering graduation is required by the University of all candidates for a degree. This fee must be paid before the end of the seventh week of the second term in the senior year.

Payments

All payments should be made at the treasurer's office which is located on the first floor of Richards Hall. Checks should be made payable to Northeastern University.

Refunds

The University provides all instruction and accommodations on a yearly basis; therefore, *no refunds are granted except in cases where students are compelled to withdraw on account of personal illness or to enter the armed forces of the nation.*

Expenses

The following tables, compiled from expense returns submitted by the student body, give an idea of freshman expenditures under ordinary conditions.

Estimated College Expenses for a Freshman

Application Fee.....	\$ 5.00
Tuition.....	250.00
University Fee.....	24.00
Chemical Laboratory Deposit.....	10.00
Student Activities Fee.....	16.00
Books and Supplies.....	35.00
	<hr/>
	\$340.00

(Engineering students should add approximately \$25 for drawing instruments and equipment.)

*Estimated Living Expenses Per Week for a Freshman
Residing Away from Home*

Room Rent.....	\$ 4.00
Board.....	7.00
Laundry.....	1.00
Incidentals.....	2.00
	\$14.00

The figures given above are approximate and may not exactly apply to any one student; however, they will be found to represent fairly well the expense of a freshman who lives comfortably but without extravagance.

Textbooks and Supplies

The Northeastern University Bookstore, located in the Basement of Richards Hall, is a department of the University and is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the University may be purchased at the Bookstore.

All students may purchase Day College textbooks which are for their own use at a ten per cent discount. The ten per cent discount will not apply on equipment, supplies, or novelties. It is the policy of the Bookstore, however, to stock these materials and to sell them at the lowest possible prices.

Part-Time Work

Students who find it necessary to accept part-time jobs while attending college may obtain such work through the Director of Co-operative Work.

No student is justified in assuming that the University will take care of his expenses or guarantee to supply him with work sufficient to meet all his needs.

A student should have available a reserve fund adequate to provide for immediate needs and unexpected contingencies. This should ordinarily amount to at least the first year's tuition plus the student activity and other fees, room rent, and board for several weeks, or a total of about \$500.

Grades and Examinations

Examinations

Examinations covering the work of the term are usually held at the close of each term. Exceptions may be made in certain courses where, in the opinion of the instructor, examinations are not necessary.

Condition Examinations

Condition examinations are given on the registration day of each ten-week period. The charge is three dollars (\$3.00) for each condition examination. No student may take more than two condition examinations on any one day.

Freshmen may take one condition examination to remove a deficiency in a first semester course on the upperclass registration day which comes at least ten weeks after the close of the first semester of the freshman year.

A student must petition to take a condition examination at least two weeks in advance of the date the examination is desired.

Senior Condition Examinations

No condition examinations are given at the end of the second term. This means that a failure in a second term senior course cannot be made up before Commencement.

No senior will be permitted to take more than one condition examination at the beginning of the second term.

The responsibility for the removal of a condition rests with the student, who is required to ascertain when and how the condition can be removed.

Grades

A student's grade is officially recorded by letters, as follows:

- A superior attainment
- B above average attainment
- C average attainment
- D lowest passing grade, poor attainment (the faculty will accept only a limited amount of grade D work toward the Bachelor's degree)
- F failure, removable by condition examination
- FF complete failure, course must be repeated in class
- I incomplete, used for intermediate grades only to signify that the student has not had time to make up work lost through excusable enforced absence from class
- L used in all cases of the removal of a failure by condition examination or by attendance at summer term.

A student who does not remove a condition before that course is again scheduled, a year later, must repeat the course. A condition in more than one subject may involve the loss of assignment to co-operative work.

The responsibility for the removal of a condition rests with the student who is required to ascertain when and how the condition can be removed.

Dean's List

A Dean's List, issued at the end of each term, contains the names of upperclass students who have an honor grade average in all subjects during the preceding period. Freshmen who achieve high scholastic standing are included on a Freshman Honor List, which is published at the end of each grading period. No student under disciplinary restrictions is eligible for either of the honor lists.

Reports on Scholastic Standing

Freshman reports are issued at the end of each grading period; upperclass reports, at the end of each term. Questions relative to grades are to be discussed with the student's faculty adviser.

Students are constantly encouraged to maintain an acceptable quality of college work. Parents and students are always welcomed by the college officers and faculty advisers for conference upon such matters.

Parents or guardians will be notified whenever students are advised or required to withdraw from the University.

General Conduct

Conduct

It is assumed that students come to the University for a serious purpose and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building or to any of the furniture, apparatus, or other property of the University, the damage will be charged to the student or students known to be immediately concerned; but if the persons who caused the damage are unknown, the cost for repairs may be assessed equally upon all the students of the University.

Students are expected to observe the accepted rules of decorum, to obey the regulations of the University, and to pay due respect to its officers. Conduct inconsistent with the general good order of the University or persistent neglect of work may be followed by dismissal; if the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is desired to administer the discipline of the University so as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present as his own any work which he has not performed, or to pass any examination by improper means, is regarded as a most serious offense and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

Scholastic Year for Seniors

Seniors of either division who are candidates for a degree in the current year must have completed all academic work, class assignments, theses, regular and special examinations, before twelve o'clock noon of the Saturday next following the close of recitations for seniors.

Attendance

Students are expected to attend all exercises in the subjects they are studying unless excused in advance. Exercises are held and students are expected to devote themselves to the work of the University between 9:00 A.M. and 5:00 P.M., except for a lunch period, on every week day.

No cuts are allowed. A careful record of each student's attendance upon class exercises is kept. Absence from regularly scheduled exercises in any subject will seriously affect the standing of the student. It may cause the removal of the subject or subjects from his schedule. If he presents a reasonable excuse for the absence, however, he may be allowed to make up the time lost and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course may designate.

Laboratory work can be made up only when it is possible to do so during hours of regularly scheduled instruction.

Absences from exercises immediately preceding or following a recess are especially serious and entail severe penalties.

Attendance at all mass meetings of the student body is compulsory. Exceptions to this rule are made only when the student has received permission from the Director of Student Activities previous to the meeting from which he desires to be absent.

Student Housing

Housing Regulations

The University endeavors to exercise due consideration and care for the student's welfare while he is in residence. This necessitates the adoption of the rules and regulations presented herewith.

1. Assignments will be made when the student registers.
2. Students may inspect rooms before accepting an assignment; after reaching a decision students must notify the office of the Registrar, 254R.

3. Students who accept room assignments must retain them for the period of their residence, unless given permission by the Registrar to change.

4. Students are not permitted to live in unsupervised quarters. Under no conditions are groups of students permitted to lease apartments.

5. Students are not permitted to engage rooms without the prior approval of the University. Those violating this rule will be required to give up such rooms immediately and will be assigned by the University to approved quarters.

6. Violation of any of the above rules is considered a breach of discipline and will be dealt with accordingly.

Dormitories

At present the University does not maintain dormitories. Provision, however, is made for students to secure rooms in the vicinity. Many freshmen prefer to take room and board at the fraternity houses, which are all supervised by the University through faculty advisers. For information relative to such housing write the Director of Admissions.

Rooms in the dormitory of the Huntington Avenue Branch of the Boston Y.M.C.A. may be secured only through the Housing Department of the Y.M.C.A. The applicant must present himself in person to a representative of the Department before assignment will be made.

Applicants desiring to room in the Association dormitory are advised to write the Housing Department of the Huntington Avenue Branch, 316 Huntington Avenue, Boston, Massachusetts.

Freshman Counseling

Freshman Orientation Period

In order that freshmen may be ready to pursue their academic work with greater composure and be somewhat acclimated before the beginning of scholastic work, three or four days prior to the first term are devoted to a freshman orientation period. During this time freshmen are advised as to choice of program, and assisted in every way possible in order that they may be prepared to begin serious study and work on the first day of the college term. All freshmen are required to attend all exercises at the University scheduled during the orientation period.

An optional feature of the orientation program is the freshman camp conducted under the auspices of the Student Union. The camp is planned particularly for out-of-town students, although commuters are welcomed. It aims at providing a stimulating and wholesome environment under vacation conditions in which the new men may become acquainted with one another and with members of the faculty. The camp site on Lake Massapoag, in the northern part of Massachusetts, is admirably equipped for this purpose, having ample facilities for baseball, basketball, tennis, boating and swimming. The cost of the two days at camp is nominal, and most freshmen avail themselves of this opportunity for recreation prior to the beginning of the college year.

Physical Examination

All freshmen receive a thorough physical examination at the University during the orientation period. All students are expected to report promptly at the appointed time for examination. Those who fail to appear at the appointed time will be charged a special examination fee of two dollars (\$2.00).

Freshman Counselors

At the time of his matriculation each freshman is assigned to a personal counselor, a member of the faculty, who serves as an interested and friendly counselor during the perplexing period of transition from school to college. A personal record card is prepared for each student, containing certain pertinent data from his preparatory school record, the report of his physical examination at Northeastern, his scores on psychological tests, the results of placement examinations, and any special notes which may be of significance in counseling work. The aim of the freshman counseling system is primarily to assist students in making an

effective start upon their programs and secondarily to acquire for the later use of guidance officers a fund of significant information relative to every freshman. Counseling is under the direction of the Dean of Students, assisted by a clinical psychologist, who handles the diagnosis and remedial treatment of difficult problem cases.

Individual Attention to Freshmen

Not only is attention given to the scholastic problems of the student, but also to personal problems in which advice is needed and desired. The aim is to guide the student to the fullest possible personal development.

The college record of each student is carefully analyzed in the light of what could reasonably be expected of him, in view of his previous school record, his score on psychological tests, and all other factors in his situation. If he is not doing his best work, an investigation is made to determine and eliminate the causes. If he is doing as well as could be expected or better, he is encouraged to continue his efforts. In other words, each student is held to the most effective work possible, through advice, encouragement, and assistance.

Scholarships, Prizes and Awards

Trustee Scholarships

Established in 1928 by the Board of Trustees of Northeastern University. Each year the University grants in the three Day Colleges twenty-five full tuition scholarships to entering freshmen who have demonstrated throughout their preparatory or high school course superior scholastic attainment. For additional information relative to these scholarships communicate with the Director of Admissions. Applications for Trustees' Scholarships must be filed on or before April 1, 1943.

Charles Hayden Memorial Scholarships at Northeastern University

Established in 1939 through the generosity of the Charles Hayden Foundation and subject to annual renewal. The Foundation, created by the will of the late Charles Hayden, an alumnus of the Boston English High School, offers annually a sum of money to be distributed as memorial scholarships at Northeastern University. The scholarships are awarded to worthy entering students whose parents are unable to finance the entire cost of their education. To be eligible for consideration a student must have graduated from the English High School or from one of the following high schools in Boston and its metropolitan area: Arlington, Belmont, Boston (Brighton, Charlestown, Commerce, Dorchester, East Boston, English, Hyde Park, Jamaica Plain, Mechanic Arts, Public Latin, Roslindale, Roxbury Memorial, South Boston), Braintree, Brookline, Cambridge (High and Latin, Rindge Technical), Canton, Chelsea, Dedham, Everett, Lexington, Malden, Medford, Melrose, Milton, Needham, Newton, North Quincy, Quincy, Revere, Somerville, Stoneham, Wakefield, Waltham, Watertown, Wellesley, Weston, Weymouth, Winchester, Winthrop. While the scholarships are designed primarily to assist students through their freshman year in college, the Foundation has set up a supplementary loan fund to make available limited assistance to meet exigencies which may arise in the upper class years. Each recipient of a Charles Hayden Memorial Scholarship is presented a properly endorsed certificate and is eligible for membership in the Charles Hayden Scholars Club of the University. Full particulars concerning these awards may be obtained from the Director of Admissions of Northeastern University.

Dean's List Scholarships

Established in 1929. Annually at the Dean's List Dinner three scholarships of one hundred dollars each, known as the Dean's

List Scholarships, are presented to the students with the outstanding records in the sophomore, middler, and junior classes. These scholarships are applicable to the recipients' tuition the first term of the following year.

Dean's List Senior Letter

Established in 1929. At the time of the award of the Dean's List Scholarships a Dean's List Senior letter is presented to the senior student who leads the seniors in the day colleges in scholastic achievement. The letter is a congratulatory one from the President of the University and is a coveted prize.

Sears B. Condit Honor Awards

Established in 1940 through the generosity of Sears B. Condit. In the fall of the year at a University convocation Sears B. Condit Honor Awards, not less than ten in number, are awarded to outstanding students in the upper three classes of the College of Liberal Arts, the College of Business Administration, and the College of Engineering. Students who have received the Dean's List Scholarships are not eligible for one of these Honor Awards. Each award carries a stipend of not less than fifty dollars as well as a certificate of achievement.

Boston Society of Civil Engineers Scholarship in Memory of Desmond FitzGerald

Established in 1931 by the Boston Society of Civil Engineers in memory of Desmond FitzGerald, a former president of the Society and an eminent hydraulic engineer with a distinguished record of service. The scholarship is subject to annual renewal. It has been awarded annually since 1931 to an outstanding Northeastern University senior or junior student in the Department of Civil Engineering of the College of Engineering. The presentation is made by the President of the Boston Society of Civil Engineers at a College of Engineering convocation in the spring of the year.

Tau Beta Pi Award

Massachusetts Epsilon Chapter of Tau Beta Pi Association, national honorary society in engineering, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

The Sigma Society Award

Established in 1930. The Sigma Society, the honor society of the College of Business Administration, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

The Academy Award

Established in 1938. The Academy, the honor society of the College of Liberal Arts, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

Henry B. Alvord Memorial Scholarship in Civil Engineering

Established in 1940 in memory of the late Henry B. Alvord, Professor of Civil Engineering and Chairman of the Department for eighteen years. The award is made annually to a student graduating from an accredited secondary school who has demonstrated superior academic ability and gives promise of succeeding in civil engineering. The grant of two hundred and fifty dollars is made only to an entering freshman who is qualified for and plans to study civil engineering.

William J. Alcott Memorial Award

Established in 1934 by members of the faculty and other friends to perpetuate the memory of William Jefferson Alcott, Jr., a brilliant member of the Department of Mathematics in Northeastern University from 1924 until his death in 1933. The Award is offered annually in the form of a prize purchased with the income to the fund for outstanding scholastic achievement during the preceding year, either in a particular field of interest or for a superior academic record.

Public Speaking Contest

Established in 1922. Each spring the University conducts a Public Speaking Contest for which all students in the day colleges are eligible. Prizes of forty, thirty, twenty, and ten dollars respectively are awarded to the four winning speakers in a contest before the upperclass student body assembled in a general mass meeting. Speeches are original in nature and about ten minutes in length. The judges base their decision on appropriateness of subject, content, and delivery. Preliminary contests are held during the winter in each division.

Buildings and Facilities

Boston — A Great Educational Center

THE fact that Northeastern University is in Boston broadens the educational and cultural opportunities of its students.

Few other cities in the country are so rich in the finest elements of American life. Many of its historic buildings, such as the Old State House, Faneuil Hall, and the Old North Church, have become museums for the preservation of old documents, paintings, and other collections representative of early Colonial life. The Boston Public Library and the Museum of Fine Arts, both within a few blocks of the University Buildings, are widely noted for their treasures of literature and art. Even nearer to the University is Symphony Hall, home of the world-famous Boston Symphony Orchestra. And the many churches within Greater Boston not only afford the opportunity of hearing distinguished preachers but through their student clubs and young people's societies make possible for students a fine type of social and intellectual life.

University Buildings

Location

Northeastern University, except for the Law School, is housed in four buildings located on Huntington Avenue, Boston, at the end of the Huntington Avenue Subway and opposite the historic Boston Opera House. The main administrative offices of the University are located in Richards Hall, a four-story brick structure added to the physical plant of Northeastern in 1938.

The chief railroad centers of Boston are the North and South Stations. To reach the University from the North Station, board a car going to Park Street, at which junction transfer to any Huntington Avenue car. To reach the University from the South Station, board a Cambridge subway train for Park Street Under. There go up one flight of stairs and board any Huntington Avenue car.

East Building

The East Building serves as headquarters for the Colleges of Liberal Arts and Business Administration. In addition, it houses the University Library, the Business Administration Laboratory, and several department offices. Jacob P. Bates Hall is also in this building. The latter is used for University band and orchestra rehearsals, glee club rehearsals, and entertainments, as well as dramatic club work.

South Building

The South Building, located directly behind the East Building, houses the following laboratories: Time and Motion Study, Hydraulics and Sanitary Engineering, Concrete and Highway, and Electrical Measurements and Dynamo Laboratories. In addition, it provides space for department offices, classrooms, conference rooms and one large drafting room.

Richards Hall

Richards Hall is the first unit of the new Northeastern plant. Its 100,000 square feet of floor area provide ample space for administrative offices, the bookstore, Student Union reading and game rooms, Chapel, and many other facilities.

The major portion of the building is given over to laboratories and classroom areas. Laboratory space is provided for the following: Mechanical Engineering, General and Advanced Physics, Inorganic, Organic, Analytical, and Physical Chemistry, together with several special research laboratories.

Outstanding among the classroom areas are a large chemistry lecture hall and two large classrooms seating 300 and 200 students respectively. On the fourth floor are located three large, light and well-equipped drawing rooms, together with an art room for carrying on designing and drafting which form so important a part of technical work. The penthouse contains a radio laboratory, astronomy laboratory, and a blueprint room.

New Building

The New Building is the second unit of the proposed Northeastern plant. It has a basement and four stories housing laboratories, classrooms and a recreation area, the *University Commons*. Chemical engineering laboratories and classrooms take up the entire basement. The second floor contains a large lecture hall and classrooms. The Advertising Laboratory and classroom take up the entire third floor. The fourth floor is given over almost entirely to the biological laboratories and biology lecture room.

Beacon Hill Building

The building housing the Law School at 47 Mt. Vernon Street is a three-story structure completely equipped with administrative offices, faculty offices, classrooms, library and student recreational rooms. The interior of this building is both commodious and new, the entire structure having been recently remodeled by the University.

Laboratories

The laboratories of the University fall into three categories. The first group includes those for experimental work in the pure sciences of biology, chemistry, and physics. The second includes those for the study of engineering in its major branches (civil, mechanical, electrical, chemical, and industrial). The third comprises the business and statistical laboratory.

In addition to these laboratory facilities which are described in the following pages, motion pictures and lantern slides are frequently used to supplement classroom instruction. For this purpose, there are available motion picture projectors for both sound and silent film as well as several lantern slide projectors.

Biology

The Department of Biology occupies the fourth floor of the New Building, which contains in addition to the Zoological, Anatomical and Botanical Laboratories, its offices, research areas, and lecture hall. The laboratories are fully equipped for general and special work, with extensive collections of museum preparations, models, and specimen collections displaying thousands of specimens illustrating the various fields of biological study.

Chemistry

The Chemical Laboratories located on the fourth floor of Richards Hall were given to the University by the Charles Hayden Foundation. They are splendidly equipped for work in general and inorganic chemistry, qualitative and quantitative analysis, and organic and physical chemistry. In addition several service rooms and space for a limited amount of research are provided.

General Chemistry and Qualitative Analysis

This laboratory is fully equipped with water, gas, electricity, steam, and fume hoods. A hydrogen-sulphide room, a balance room, and a conference room are also a part of this unit.

Organic Chemistry

This laboratory provides about six feet of working space for each student. The facilities are similar to those in the general chemistry laboratory, and in addition, there is provided a large evaporating unit and an organic combustion furnace.

Quantitative Analysis and Physical Chemistry

The tables and fume hoods and other equipment in this room are similar to those in the Organic Laboratory. In addition, a

large drying oven, special balances, electrical instruments, temperature measuring devices, and other specialized apparatus are provided.

A small laboratory for technical analysis of such materials as coal, vegetable oils, petroleum, textiles, and rubber adjoins the main laboratory, and a special laboratory is also available for electrolytic work.

Research

Three small laboratories are equipped for advanced research. These are available for graduate thesis investigations.

Physics

The Physics Laboratories located on the second floor of Richards Hall are fully equipped for elementary and advanced study as well as research. In addition an astronomy laboratory and a radio laboratory are located in the penthouse on Richards Hall.

General

This laboratory, designed for elementary instruction, is provided with gas, water, and electricity. A spectrometer room, a photographic room, and a photometer room are directly connected with this laboratory. Sufficient apparatus is available so that ordinarily students may work alone on most experiments.

A second smaller laboratory is equipped for more specialized experiments, and has facilities for glass blowing and high vacuum work. A flexible electrical system here permits use of all the supplies available to the Advanced Laboratory.

Advanced

This laboratory is designed with a view to both precision and flexibility. A special switchboard provides single phase and polyphase alternating current and a variety of direct current potentials. A workshop with lathe, drill press, grinder, and other tools as well as two separate research rooms complement the laboratory. A large number of special instruments plus considerable auxiliary apparatus gives a well rounded supply of equipment for advanced study and research.

Astronomy and Radio

The astronomy laboratory is provided with equipment for grinding mirrors and constructing telescopes, and a platform on the roof provides a very good unobstructed view for making observations.

The radio laboratory is a completely shielded room and houses the amateur transmitting station which operates on both radio-telephone and radiotelegraph. Facilities are also available for research.

Psychology

The Psychology Laboratory, located on the third floor of Richards Hall, is equipped for the observation of reacting human beings under controlled conditions. Equipment consists of instruments for measuring and controlling factors involved in perception, memory, and learning, and of psychometric devices for the testing and evaluation of individual abilities.

Civil Engineering

Most of the laboratory work in civil engineering is, of course, actual field work in surveying. A considerable amount of demonstration equipment and models are available for use in the study of structures, hydraulics, sanitary engineering, highways, concrete and soil mechanics.

Field Work

The Department of Civil Engineering is provided with a variety of excellent and up to date equipment for field work. The instruments have been chosen to make possible the working out of advanced as well as elementary field problems, and to acquaint the students with the principal makes and types of instruments in general use.

Hydraulics and Sanitary Engineering

This laboratory located on the first floor of the South Building is equipped with demonstration measuring devices for use in connection with the courses in hydraulics.

Complete equipment is also provided for water and sewage analysis, and research students can be accommodated in this field.

Concrete and Highway Engineering

Located on the second floor of the South Building, this laboratory is equipped for conducting all the routine tests on cement and aggregate. The 300,000 lb. Riehle testing machine in the Mechanical Engineering Department is available for compression tests on concrete cylinders.

Equipment is also available for conducting a major portion of the accepted tests on bituminous materials as used in highway work. Soil Mechanics equipment consists of a general soil sampler, consolidometer, wet-mechanical gram-size analysis and a quicksand demonstration tank.

Mechanical Engineering

The Mechanical Engineering Department has a suite of well equipped laboratories containing a large variety of modern

machines and occupying over 10,000 square feet of floor space in the basement of Richards Hall. Special areas have been set aside and equipped for oil testing, concrete mixing, mechanics research, and similar purposes. Auxiliary equipment is, of course, available for making all the usual tests and measurements.

Steam Power

This equipment includes a wide variety of steam engines, turbines, pumps, heat exchangers, and measuring instruments.

The auxiliary steam power plant operated by the University and the Boston Y.M.C.A. is also used for testing purposes. This plant consists of four horizontal return tubular boilers, two burning coal and two burning fuel oil. These feed three reciprocating steam engines and one turbine which in turn drive four direct current generators.

Internal Combustion and Aeronautics

The internal combustion equipment includes a number of gas and oil, automobile, airplane, and Diesel engines. Most of these are set up for running experimental tests, but several are available for dismantling and demonstration purposes.

In addition to the study of airplane engines, the laboratory is equipped with a small wind tunnel for experimental work in aerodynamics.

Refrigeration, Heating, and Air Conditioning

Included under this heading are an ammonia refrigerating machine, a constant temperature room equipped for either heating or cooling, and a large air conditioner unit.

Testing Materials and Heat Treatment

For tension, compression, bending, and shearing tests, the laboratory is equipped with a 300,000 lb. capacity Riehle and a 50,000 lb. capacity Olsen, as well as several smaller testing machines. For other tests the laboratory has cement testers, torsional testing machines, impact testers, fatigue testers, hardness testers, extensometers, oil testing equipment calorimeters, as well as instruments for measuring speed, vibration, temperatures, pressures and flow of fluids.

For heat treatment studies an electric furnace and a gas fired furnace are available. Equipment magnifying up to 2600 diameters is available for photographing crystalline structures, and the laboratory has polaroid equipment for photoelastic stress analysis.

Machine Shop

Adjoining the laboratory is a machine shop fully equipped with machine tools, welding equipment, and a small forge.

Electrical Engineering

The basement of the South Building is occupied by the electrical laboratories. These cover an area of approximately 7,800 square feet and include the dynamo, measurements, high tension, electronics and communication laboratories.

Dynamo

This laboratory is provided with both 60 cycle 3 phase 230 volt alternating current and 115-230 volt three-wire direct current. The equipment includes more than sixty motors and generators of different types together with the necessary auxiliary equipment to operate and test them. The motors and generators have been selected so as to reduce as much as possible the risk from high voltage while making available to the students a representative range of commercial apparatus.

Electrical Measurements

The equipment here is of two distinct types: first, that planned primarily for teaching principles of measurement, and secondly, that which is used in teaching advanced standardizing methods as well as for calibrating instruments in other laboratories of the University. Briefly, this laboratory is equipped for practically any work in electrical measurements except for the absolute determinations carried on in national standardizing laboratories.

High Tension

This laboratory is equipped with the necessary transformers and auxiliary equipment to provide 4 Kva. at 50,000 volts potential. A special room has been equipped for cable and insulation testing, and impulse testing of insulation is made possible by a surge generator capable of producing waves having crest values up to 300,000 volts. A 4,000 ampere low voltage transformer is also available for the study of the effects of heavy currents in conductors, switches, and contacts.

Electronics and Communications

This laboratory is equipped with apparatus for about forty odd experiments in the field of Electronics, Networks, Radio Engineering and Ultra High Frequency Technique. The laboratory facilities are designed to cover all the experiments outlined in the second M. I. T. Conference on Ultra-High-Frequency Technique.

Chemical Engineering

The Department is now located in the ground floor of the New Building. A total of 8,218 square feet has been allotted for its exclusive use.

Unit Operations Laboratory

This laboratory is primarily devoted to the study of flow of fluids, filtration, heat transfer, distillation, evaporation, absorption, and drying; but houses in addition equipment for carrying out such unit processes as nitration, reduction, fusion, and sulphonation.

Approximately 1,000 square feet of this laboratory consists of a double floor area serviced by a traveling crane for installing and repairing semi-plant scale equipment.

Crushing, Grinding and Separation Laboratory

A separate laboratory equipped with a ventilating fan houses equipment for crushing, pulverizing, and separating solids. All equipment is operated by individual electric motors with speed control frequently taken advantage of to get experimental data.

Machine Shop

A small, well equipped shop is available for the construction and repair of equipment.

Research Space

In addition to the Research Laboratory, the mezzanine floor of the Unit Operations Laboratory is available for investigating new processes.

Industrial Chemical Laboratory

This laboratory is equipped with modern laboratory benches and is located next to the stock room. The determination of the optimum conditions for carrying out unit processes on a small scale is accomplished in this laboratory.

Industrial Engineering

Students in the Department of Industrial Engineering share in the use of the Mechanical Engineering Laboratories and the Business Laboratory. The Industrial Engineering Laboratory itself is located on the first floor of the South Building and is devoted exclusively to methods engineering (motion and time study work).

Methods Engineering

This laboratory is completely equipped with the latest facilities and tools used by methods engineers. Besides the general equipment consisting of benches, tables, lathe, jigs, fixtures, and racks, the laboratory has an ample supply of time study boards, stop watches and timers for time study work. There is also available complete motion picture equipment and microchronometers for micromotion work.

Design and Drafting Rooms

The University possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with lockers containing the drawing supplies, files containing blue prints, and photographs of machines and structures that represent the best practice. Drafting room blackboards are equipped with traveling straight edge devices which facilitate speed and accuracy in blackboard demonstrations.

Libraries

The new library is located on the first floor of the East Building. The reading room seats about 300 students at one time, and the stack capacity approximates 25,000 volumes. Here are available all of the general reference books, most of the professional and scientific volumes, and most of the periodicals to which the University subscribes.

Library hours are as follows:

8:45 A.M. to 10:00 P.M. Mondays through Fridays

8:45 A.M. to 5:00 P.M. Saturdays

Closed on Sundays and Holidays

The library is under the direction of a librarian and three assistants all of whom have had special training for the work.

A general reading room and library is maintained by the Northeastern Student Union in Room 356, Richards Hall. The books located here are chiefly non-technical works dealing with contemporary affairs, religious problems, international relations, travel, etc., among which students may browse during periods of relaxation. A few of the literary and religious periodicals are also available in this room.

Boston Public Library

All members of the University, whether resident or non-resident students, have the privilege of taking books from the Boston Public Library and of using the library for general reference and study. Inasmuch as this is one of the best in the country, it presents unusual opportunities to the students. Within a few minutes' walk from the University, it enables students to have unlimited reference at any time to books and periodicals bearing upon their studies.

Lecture Assembly Halls

Through special arrangement, Jordan Hall, Symphony Hall, and the Boston Opera House are made available for assembly purposes. These halls provide ample space for student activity assemblies and for special lectures by noted men. All the students in college at any period assemble for one hour each week throughout the college year. More than half of the assembly sessions are devoted to interests and activities developed by the students themselves. The other assembly periods are devoted to special lectures, sometimes under the direction of the student body and sometimes under the direction of the faculty. The special lectures are devoted to those elements of life which count most in the development of a man's viewpoint and his character.

Equipment for Physical Training

Northeastern has exceptional facilities for all-round physical training. The gymnasium is one of the most complete in New England. Adjoining Richards Hall is a large field equipped for athletics. Here are two tennis courts, an outdoor gymnasium, a rifle range, a baseball cage, jumping pits, and a track with a 100-yard straightaway.

Natatorium and Gymnasium

The Natatorium is located in the East Building between the assembly hall and gymnasium. It is 75 feet long and 25 feet wide and is generally regarded as one of the finest of its kind in this area.

The Gymnasium is known as the Samuel Johnson Memorial Gymnasium and provides the following facilities: three gymnasiums, a twelve-lap running track, two large exercise rooms, boxing and wrestling rooms, handball and squash courts, bowling alleys, showers, steam baths, massage rooms, electric cabinet baths, and locker rooms.

Huntington Field

Huntington Field, the University athletic field, is located on Kent Street in Brookline and provides ample facilities for track, baseball, football and other outdoor sports. The University maintains bus service between its Huntington Avenue plant and the Huntington Field making it possible for students to get back and forth with a minimum loss of time. The field is equipped with a commodious field house as well as ten sections of stadium seats for spectators.

Student Activities

NORTHEASTERN University regards student activities as an integral part of its educational program. One of the main departments of the University is charged with the responsibility of co-ordinating the various types of activities and of administering the social, musical, literary, and athletic organizations in such a way as to enable each to contribute in a wholesome, worth while manner to student life at Northeastern. Every student is encouraged to participate in such activities as may appeal to him, although a standard of scholarship which is incompatible with excessive devotion to such pursuits is required of all students.

Members of the faculty also are interested in the informal aspects of the college program. Teaching loads are kept sufficiently low so that the instructional staff may have ample opportunity to mingle with students outside of the classroom in social activities and on the athletic field. In fact, some member of the faculty is appointed to serve as adviser for each student activity. His function is not to dictate how the organization shall be run, but to encourage the students in their extra-curricula endeavors and to give them the benefit of his mature point of view in solving the problems that inevitably arise.

One of the outstanding contributions of the co-operative plan in the field of higher education has been its capacity to develop in students those powers of social understanding that are so essential to success in professional life. At Northeastern the program of student activities is made to contribute to this end in a very real way. It is a conscious aim of the student activities advisers to develop among their advisees those qualities of personality and character which will enhance their usefulness as future professional men and citizens. Students have splendid opportunities to develop administrative and executive ability as leaders of undergraduate organizations. No academic credit is awarded for any student activity. This has been no deterrent, however, to student participation in extra-curricula activities, for a recent survey of the undergraduate body showed that over 90% of the enrollment were engaged in one or more forms of student activity.

Student Council

Student government of the Day Colleges at Northeastern University is vested in the Student Council, composed of elected representatives from the various classes. The Council is the authority on all matters relating to student policies not definitely connected with classroom procedure. It has jurisdiction, subject

to faculty approval, over all such matters as customs, privileges, and campus regulations. The Dean of Students serves as faculty adviser to the Student Council.

Northeastern Student Union

The purpose of the Northeastern Student Union is to carry out the work of a Christian association within the University. It endeavors to deepen the spiritual lives of Northeastern men through the building of Christian character, to create and promote a strong and effective Northeastern University spirit in and through a unified student body, to promote sociability, and to emphasize certain ethical, social, civic, intellectual, economic, physical, vocational, and avocational values.

All students are encouraged to participate in the activities of the Union, no matter what their religious faith, as the work of the Union is entirely non-sectarian. A good moral character is the only requirement for eligibility to membership. It is hoped that as many students as can will participate in this ideal extra-curricula work.

The Union conducts a weekly Chapel Service in the little chapel in Richards Hall, to which all faculty members and students are invited. The service, which is non-sectarian and voluntary, is held on Thursday mornings from 8:40 to 8:55 o'clock. Many eminent preachers of Greater Boston are engaged to deliver brief addresses.

Athletic Association

All students in the Day Colleges are members of the Northeastern University Athletic Association. Policies of the association are passed upon by a Faculty Committee on Student Activities. This committee decides what students are eligible to participate in athletics, what the various sports schedules shall be, and what students may be excused from classes to represent the University on athletic trips.

The actual administration of the athletic program is in the hands of a second committee, known as the General Athletic Committee, which consists of the Director of Student Activities, the captains and managers of all varsity teams, and the coaches as ex officio members.

The University maintains both varsity and freshman teams in baseball, basketball, cross-country, football, hockey, and track. Intercollegiate games and meets are arranged with the leading colleges in the East. In addition to intercollegiate athletics the athletic association conducts an intramural program in various sports.

Publications

"The News"

A college newspaper, the *Northeastern News*, is published each week throughout the college year by a staff selected from the student body. The copy is prepared, edited, and published by the students themselves with the counsel of a faculty adviser. Opportunity is afforded for the students to express their opinions on subjects relating to study, co-operative work, social events, or topics of the day. Positions on the *News* staff and promotions are attained by competitive work. The paper is in part supported by advertising, both national and local, and in part by a portion of the student activities fee. The *Northeastern News* is a member of the Eastern Intercollegiate Newspaper Association, and sends one of its editors to the annual convention of this association each year. Copies of the *News* are mailed to upperclassmen when they are at co-operative work and to freshmen after the close of their college year.

"The Cauldron"

The combined senior class publishes annually a college year book, *The Cauldron*. It is ready for distribution in the latter part of the second semester and contains a complete review of the college year with class histories, pictures of all seniors, of the faculty, and of undergraduate groups, as well as a miscellany of snapshots and drawings contributed by students.

Honor Societies

Three honorary societies are chartered by the University in its Day Colleges:

Tau Beta Pi, in the College of Engineering.

The Sigma Society, in the College of Business Administration.

The Academy, in the College of Liberal Arts.

Election to the college honorary societies is founded primarily upon scholarship, but before a man is privileged to wear the honorary society insignia he must give evidence of an integrity of character and an interest in the extra-curricula life of the University as well as an acceptable personality. The Societies have memberships consisting of the outstanding men in the Day Colleges. Election to the honorary society is the highest honor that can be conferred upon an undergraduate.

Professional Societies and Clubs

To assist in the promotion of social, cultural, and intellectual advancement through informal channels, a number of professional societies and clubs are sponsored.

National Engineering Societies

Students in the several professional curricula of the College of Engineering operate Northeastern University Sections of the appropriate national professional societies. Chief among these are the following:

American Society of Civil Engineers
Boston Society of Civil Engineers
American Society of Mechanical Engineers
American Institute of Electrical Engineers
American Institute of Chemical Engineers
Society for the Advancement of Management
American Chemical Society

Members of the engineering faculty who hold membership in the parent organizations serve as advisers to these student groups. Meetings are held regularly, usually at night so that students from both divisions may attend, and practicing engineers are invited to address the sections. Occasionally appropriate motion pictures are shown, or the group visits some current engineering project in the vicinity of Boston. The College of Engineering encourages these student sections of the technical societies in the belief that they provide a wholesome medium for social intercourse as well as a worth while introduction to professional life.

Membership in the student sections of the American Society of Civil Engineers and Boston Society of Civil Engineers, the American Society of Mechanical Engineers, or the American Institute of Electrical Engineers also includes membership and privileges of the Engineering Societies of New England. This organization is an affiliation of all the major technical societies of Boston and vicinity and provides valuable lectures, smokers, and informal meetings with the outstanding men engaged in engineering work in Boston and vicinity.

Astronomy Club

Membership in the Astronomy Club is open to all students in the College of Engineering who maintain satisfactory scholastic standing. The club has access to machine shops for the construction of telescopes and other instruments. It also has quarters in the penthouse on the fifth floor of Richards Hall. Meetings are held twice a month for the purpose of making astronomical observations and carrying on appropriate discussions.

Banking and Finance Club

The purpose of this organization is to increase among its members the knowledge of the theory and practice of banking. Any student of Northeastern University, while enrolled in any of the banking courses of the College of Business Administration, is

eligible to active membership in this club. Meetings are held each ten week period at which banking executives from Greater Boston are invited to discuss current issues in the field.

Camera Club

The Camera Club welcomes all men interested in photography. Weekly discussions and special evening lectures by guest artists are part of the yearly program. Field trips, monthly photo contests and a general exhibition add to the interest and progressive work of this organization.

Chess Club

The Chess Club gives both beginners and experts an opportunity to enjoy the game. Yearly tournaments are held among the members and, in past years, the best men have engaged in intercollegiate competition.

Combined Musical and Dramatic Clubs

The Department of Student Activities sponsors musical clubs, such as the following: a concert orchestra, a band, a glee club, a banjo club, and a dance orchestra, for which all students with musical ability are eligible. Membership in the various musical clubs is attained by competitive effort.

Each organization has a faculty adviser and each elects a representative to the Musical Clubs Council. The purpose of this council is to co-ordinate the various musical activities of the Day Colleges. At the annual Musical Clubs Banquet, held early in the spring, charms are awarded to the leaders and managers of the several clubs and to members who have played over a period of three full years.

The various musical clubs, in conjunction with the Dramatic Club, combine in an annual mid-winter entertainment and participate in occasional outside public engagements throughout the college year.

Students interested in dramatics have an opportunity to cultivate this art under faculty coaches who co-operate with the Dramatic Club in the production of several pieces in the course of each college year.

Debating Society

The purpose of the Debating Society, formed in 1936, is "to foster and promote an interest and facility in formal argumentation; to develop an impartial, unbiased, and intellectual consideration of questions and issues of current interest; and to sponsor intercollegiate relationships and competition in the debating field." Membership is open to all students of the Day Colleges.

German Language Club

Students are given an opportunity in this club to use their knowledge of German in ways that give them entertainment as well as a greater appreciation of foreign customs and literature.

International Relations Club

The International Relations Club was founded in 1932 for the purpose of studying and discussing those current national and international events and issues which vitally concern our American life and institutions.

It is the intention of the club to deal with all questions in an impartial and broadminded manner, and to take an intelligent and effective part in promoting international understanding and harmony. The club maintains contacts with similar organizations in other colleges.

Membership is not open to freshmen, and only to those upperclassmen who maintain good scholarship.

Law and Accounting Club

All students interested in accounting and law are invited to join this stimulating club. Problems and cases involving the interrelations of accounting and law are presented and discussed at club meetings. Although upperclassmen usually present problems arising out of thesis or co-operative work, speakers from the professional world come to the meetings to present papers and lead the student discussion.

Mathematics Society

The Mathematics Society encourages the study of topics of mathematical interest which are either outside or beyond the scope of the regular mathematics courses. Membership is restricted to those men who have completed one and one-half years of study in mathematics and have an average grade of not less than "C" in mathematics courses up through differential calculus. The club meets once every five weeks in the evening. Although membership is limited to upperclassmen, any student is always welcome to any meeting, and freshmen especially interested in mathematics are always welcome.

The final program of the year is devoted to a dinner meeting for which some prominent outside speaker is procured.

Radio Club (Suspended for the duration of the war.)

One of the most popular undergraduate activities is the Radio Club. Members are provided opportunity for code practice and are encouraged to obtain their amateur licenses. The club owns and operates station W1KBN, a short wave transmitter, located in the Radio Laboratory in the penthouse of Richards Hall.

Meetings are held about once a month for the discussion of technical matters. Practicing radio engineers are frequently invited to address the club at evening meetings, when students in both divisions may attend.

Rifle Club

Organized a number of years ago, the Rifle Club was so successful that in 1933 riflery was recognized as a minor sport. Members of the club are given instruction in the art of rifle shooting. Those students who excel in intra-mural competition are selected for the team representing the University in intercollegiate contests. Practice sessions are held twice a week in the University rifle range. Membership is open to all students. Northeastern is a member of the New England Intercollegiate Rifle League and the National Rifle Association.

Yacht Club

Only recently formed, the Yacht Club is a member of the Intercollegiate Yacht Racing Association. The club participates in regattas held in the Charles River Basin and also in regattas held at other colleges.

Class Organization and Activity

Each of the classes in the Day Colleges elects its officers and carries on activities as a class. Dances are sponsored by the classes at regular periods throughout the year. One of the high lights of the social program is the Junior Promenade, held each spring at one of the Boston hotels.

Seniors plan a number of activities just prior to Commencement.

Freshmen are required to wear the red and black cap distributed through the Department of Student Activities in order that they may be readily distinguishable to each other and to upperclassmen. (This requirement suspended for the duration of the war.)

Convocations

The hour from 12:00 to 1:00 on Wednesdays throughout the year is set aside for convocations. Attendance is compulsory. Arrangements are made to bring before the student body some of the ablest and foremost thinkers of the day. A list of speakers for the year will be found on page 17 of this catalogue. When the convocation hour is not occupied by a University lecturer, class meetings, concerts, or athletic rallies are held instead. Such gatherings are under the direction of the Department of Student Activities.

Fraternities

There are at present ten local Greek letter fraternities chartered by Northeastern University. Each fraternity is provided with a faculty adviser who is responsible for the proper administration of the fraternity house under the rules and regulations established by the faculty. The list of fraternities in the order of their establishment is as follows:

- | | |
|-----------------------|--------------------|
| 1. Beta Gamma Epsilon | 5. Phi Beta Alpha |
| 2. Alpha Kappa Sigma | 6. Phi Gamma Pi |
| 3. Nu Epsilon Zeta | 7. Sigma Phi Alpha |
| 4. Sigma Kappa Psi | 8. Kappa Zeta Phi |
| 9. Gamma Phi Kappa | |

Elected representatives from each fraternity make up an Inter-Fraternity Council, a body which has preliminary jurisdiction over fraternity regulations. Its rulings are subject to the approval of the Faculty Committee on Student Activities.

The Alumni Association

The alumni of the Day Colleges are organized to promote the welfare of Northeastern University, to establish a mutually beneficial relationship between the University and its alumni, and to perpetuate the spirit of fellowship among members of the Alumni Association.

The work of the General Alumni Association is supplemented by the activities of regional alumni clubs located throughout the east and middle west. The local clubs meet periodically in their respective centers to discuss matters pertaining to the University and its alumni. Meetings are also held in conjunction with the visits of Northeastern's athletic teams to the various club centers.

Officers of the Alumni Association

President

GEORGE A. MALLION '20

Secretary

SUMNER B. BRUNS '35

Vice President

JAMES W. DANIELS '25

Treasurer

JOHN E. VADALA '31

Executive Committee

HAROLD L. BURTON '29

RAYMOND W. JAMES '32

CARL M. WEAVER '34

EDWARD V. KIRKLAND '35

WALLACE E. MACQUARRIE '40

RUDOLPH A. LOFGREN '27

Alumni Executive Secretary

RUDOLF O. OBERG '26

Alumni Faculty Representative

WARREN L. GANONG '37

Alumni Council Representatives

1913-1920—

BERNARD H. CAPEN '20

JAMES A. KNOWLTON '19

PERRY F. ZWISLER '17

1921—ROGER E. SPEAR

1922—LAURENCE S. FAUNCE

1923—EDWARD J. PERRY

1924—H. RAYMOND BENSON

1925—RENE G. MAURETTE

1926—CHARLES M. MCCOOMBE

1927—WILLIAM J. URQUHART

1928—HOWARD F. KNOWLES

1929—JAMES H. KINGHORN

1930—HARRY C. STEDT

1931—THOMAS E. RUSHFORTH

1932—ALBERT E. JOHNSON

1934—HORACE S. MILES

1935—WARNER M. ABBOTT

1936—WILLIAM E. DINGWELL

1937—LESLIE W. LENFEST

1938—GEORGE C. LECK

1939—WILLIAM E. FEIDT

1940—ALBERT S. MAKAS

1941—DAVID C. GERRY

1942—WILLIAM W. ROBINSON

THE COLLEGE OF LIBERAL ARTS

Aims

IN providing the means to a liberal education the College of Liberal Arts of Northeastern University has a three-fold objective: first, the development of intellectual capability; second, the development of a well-rounded personality; and third, preparation for a vocation.

While a liberal arts education must provide a knowledge of the development of the human race and of human experience down through the ages as well as familiarity with the world in which we live, the mere accumulation of a mass of factual information is not adequate. A truly liberal education must develop intellectual capability, the acquisition of definite intellectual interests, and the attainment of rational attitudes and points of view. A liberal education should develop an open mind, free from bias and prejudice; an eagerness for truth; a critical skepticism which insists upon the examination of the basis for every belief and the testing of every proposal before giving it adherence; the ability to analyze the several elements of a problem, to perceive its implications, and to obtain a clear perspective of the entire situation; a deep respect for human institutions and conventions based upon an understanding of the processes of social development but with a willingness to consider judicially suggested improvements.

In providing for the development of a well-rounded personality the College of Liberal Arts endeavors to aid each student in the unfolding of those personality traits and the attaining of that emotional balance which will make him not only individually efficient but also a desirable citizen, qualified in every respect to accept his social responsibilities.

The College of Liberal Arts holds that there is no inconsistency between liberal education and preparation for a vocation, since liberal arts colleges were originally established with the purpose of training for certain professions. Today it is widely accepted that a liberal education must prepare both for the art of living and for the obtaining of a living. The College of Liberal Arts aims at providing an academic program coupled with co-operative work experience which will furnish students with a sound training either for further graduate study or for immediate entrance upon graduation into some vocation.

Methods

SO that each student may plan a college program to suit his own interests and aptitudes, a wide range of electives is offered. This does not mean that students are free to elect courses indiscriminately, for if he is to obtain a liberal education the student must have training in several basic fields. Therefore, a definite series of basic courses in each curriculum is required by the faculty. These required courses are largely concentrated in the first two years of the curriculum.

Through a comprehensive guidance program each student is directed in his selection of courses so that he obtains the proper preparation for his intended vocation. Specialization in his major field is emphasized during the latter part of the curriculum and is facilitated by the opportunity for electing certain courses in the College of Engineering and the College of Business Administration.

Through the Northeastern plan of co-operative education for upperclassmen, the student makes early contact with actual working conditions and profits by the wholesome experience of earning at least part of the money to defray his own college expenses. Viewed as a whole, then, his college years surround him not with an artificial atmosphere of cloistered scholarship but with an environment very close to that which he will enter after graduation, and thus tend to make him readily employable, an essential element of vocational competence.

Evening Courses

In order to provide employed men and women with opportunities in liberal arts education a number of the regular courses are offered during the evening. These courses are designed for three groups of young men and women who are secondary school graduates and qualified for entrance to the college: (1) those who wish to prepare for admission to the School of Law, (2) those who wish to pursue a cultural program leading to the title of Associate in Arts, (3) those who do not wish to follow a specific program but desire to take courses to improve their cultural background.

The evening courses are arranged in three-year programs permitting concentration in English, history and government, and the social sciences, and a pre-legal program. Each of these evening programs meets one-half the semester hour requirement for the A.B. or S.B. degree and leads to the title of Associate in Arts.

Preparation for a Career

THE curricula in the College of Liberal Arts afford not only a broad cultural training but also the necessary foundation for a wide range of vocations. Some of the career opportunities open to the graduates of the College of Liberal Arts together with the academic programs needed are indicated below and in the pages which follow.

Business

The value of a liberal arts preparation for a business career is clearly shown by the increasing demand for liberal arts graduates by the largest and most progressive corporations in the country. For their training programs in manufacturing, merchandising, or selling many companies are seeking adaptable young men and women with a liberal arts background.

Students planning either to go to a graduate school of business administration or to enter business directly upon graduation should major in economics and should elect courses in English, government and psychology. A limited number of specialized courses in the College of Business Administration such as advertising, contracts, industrial management, insurance, investments, real estate practice, and retail merchandising may be taken by students who have had the necessary pre-requisites.

Biological Sciences

Students who major in biology can arrange programs which will lay the foundation for the following careers: teaching, dentistry, medicine (see Pre-Medical curriculum), veterinary medicine, public health, sanitation and laboratory methods; research in biology with universities, private research institutions, and governmental agencies under state and federal control; agriculture; and professional work in zoology and its applied fields such as fisheries, animal husbandry, and biological survey, etc. Graduate study is essential for most of these careers.

Chemistry

Chemistry is rapidly approaching the status of a profession as shown by the recent action of the American Chemical Society in laying down specifications for undergraduate training in chemistry. Students who choose a chemistry major at Northeastern, a program based upon the above specifications, will be prepared upon graduation to become junior chemists in industrial, commercial, or governmental chemistry laboratories. The same program provides a thorough foundation for graduate study in chemistry.

Dentistry

The minimum requirement for admission to dental schools is two years of preliminary study in an approved college. Since the requirements of individual dental schools vary, students should familiarize themselves with the specific requirements of the schools in which they are interested. For most dental schools a candidate for admission must offer at least six semester hours each in English, physics, and biology, and twelve semester hours in chemistry including organic chemistry.

Pre-dental students at Northeastern will be able to meet these requirements by choosing a biology major and electing organic chemistry in their second year program.

Government Service

Government service is a very comprehensive term since the numerous activities of modern government require all types of trained workers. For more and more of these positions a college education is essential as shown by the fact that only college graduates are eligible to take many civil service examinations today. Recently the United States Civil Service Commission inaugurated examinations for graduating seniors for such positions as Junior Biologist, Junior Economist, Junior Statistician, Junior Examination Assistant (for majors in psychology), Junior Administrative Technician, etc.

The distinctive governmental career field is that of public administration since the need for college trained personnel in administrative governmental posts of all types, political or non-political, is being increasingly recognized. While graduate training is desirable, an undergraduate program with a major in economics and a minor in government will provide the necessary foundation for a career in government service at home or abroad.

Journalism

Many of the nation's leading editors now advise students preparing for a career in journalism to obtain a broad liberal arts education rather than to concentrate on specific training in the routines of journalism in their undergraduate programs. It should be observed that opportunities in journalism today are not restricted to the urban or rural newspaper fields. Publishing houses, trade journals, house organs, advertising departments and agencies, and the various types of public relations work need college graduates with the same basic training.

Students who desire to enter journalism should choose the English-journalism major with minors from the following fields: economics, history, and government. They may elect courses in advertising in the College of Business Administration.

Law

Effective September 1, 1938, by a ruling of the Supreme Judicial Court of Massachusetts, in order to be eligible for admission to the Bar an applicant must have completed certain general educational requirements before beginning his legal education. Briefly, this general education must comprise graduation from a four-year high school and the completion of not less than half of the work accepted for the Bachelor's degree in a college approved by the Board of Bar Examiners.

Three programs of pre-legal study are offered by the College of Liberal Arts. The first two are designed to meet one-half of the semester hour requirements for the Bachelor's Degree.

One of these programs is specifically adapted to the needs of full-time day students. It comprises one year of thirty-five weeks and a second year of thirty weeks. This program follows the second year requirements of the major in economics but permits the student to elect the courses in history, government, and English which are recommended for the prospective student of law.

The other pre-legal program is designed to meet the needs of employed men and women. It is provided by offering a number of the regular courses during the evening and requires three years for completion.

The third program is a combined liberal arts and law program and reduces by one year the time ordinarily required for obtaining the A.B. or S.B. and the LL.B. degrees. Students who have completed 105 semester hours of academic work of which at least 70 have been earned in the Northeastern University College of Liberal Arts, and who have fulfilled all other graduation requirements, will receive the A.B. or S.B. degree upon satisfactorily completing the full first year program in the School of Law. Students who enter the Evening Division of the School of Law will not receive the first degree until the end of the second year of their course.

Library Work

Professional training for library work now demands at least one year of graduate study in a library school following a broad undergraduate foundation in liberal arts. While a major in English is usually advised, many opportunities are available for those who have concentrated in other fields.

Medicine

In order to be eligible for admission to a medical school according to the Committee on Education of the American Medical Association, a candidate must have attended an approved college and have included certain specific work in his program. The minimum course requirements are: six semester hours of English,

eight semester hours of inorganic chemistry, four semester hours of organic chemistry, eight semester hours of physics, eight semester hours of biology, eight semester hours of foreign languages, and twelve semester hours of non-scientific subjects. Since some medical schools impose additional requirements, pre-medical students should obtain full information from the medical school of their choice about the courses which must be offered for admission.

As a result of a recent war-time reduction in the entrance requirements of most medical schools, an accelerated pre-medical program has been arranged which requires two full academic years for completion.

Ministry

Preparation for the ministry today requires a theological school training following graduation from an approved college of liberal arts. The American Association of Theological Schools states that the appropriate foundation for a minister's later professional studies lies in a broad and comprehensive college education and that the normal place for a minister's professional study is the theological school. Recommended fields of study include: English, economics, education, government, history, foreign languages, one of the natural sciences, philosophy, psychology, and sociology.

While students who major in English, economics, psychology, or sociology will be able to arrange programs meeting the above recommendations, it is urged that pre-ministerial students obtain counsel from the dean of the theological school of their choice since some schools have further specific requirements.

Physics

As a result of the rapid developments in physics in recent years, there are increasing opportunities in applied physics on the technical staffs and in the research laboratories of the electrical, radio, optical, and other industries for the liberal arts graduate who has majored in physics. Graduate study is necessary for those who plan on research in pure physics.

Psychology

There is an increasing demand for persons trained in psychology in a wide range of occupational fields. In the field of education the demand is expanding for school psychologists at the grade-school level and for guidance workers and vocational counsellors at the junior and senior high school level.

In the field of business and industry increasing numbers of psychologists are being employed in marketing research, in ad-

vertising, and in personnel departments. In state and federal governmental agencies clinical psychologists are employed in hospitals for the mentally ill, in child guidance clinics, in employment offices, and as research workers on problems relating to cultural relations with other countries, to propaganda, and to education.

A large number of these positions require that the applicant have at least one year of graduate work and not a few require that he or she have a Ph.D. degree. For many others, however, the young college graduate with a major in psychology begins an internship with the firm or agency which employs him and continues after his internship in a regular full-time position.

Social Service

Students who major in sociology lay the undergraduate foundation for numerous phases of work with either private or public agencies in the social service field, such as social case work, family welfare, child welfare, probation and parole, juvenile court, and settlement work, and relief administration. At least one year of graduate study in a school of social work is essential for those who desire full professional status.

Statistical Work

The growing emphasis upon statistics in business, education, social service, and government has opened a new career field for the student who majors in mathematics and obtains preparation in statistics. Similar training is necessary for students who wish to enter the actuarial field.

Teaching (Secondary School)

While a major in education is not offered in the College of Liberal Arts, a minor in this field is available which meets the recommended preparation of the Department of Education of the Commonwealth of Massachusetts for teachers in secondary schools. Students from other states should familiarize themselves with the requirements of their own state as these requirements are constantly being increased.

Most small secondary schools, in which the graduate must begin, expect teachers to be able to teach at least two, and often three, subjects. Consequently programs should provide for the common combinations of related subjects. A major should be selected from the following fields: biology, chemistry, English, mathematics, or physics.

Students who desire to become teacher-coaches should obtain a second minor in physical education.

Teaching (College)

Students who plan to enter the college teaching profession will find that each of the major programs affords an excellent preparation for graduate study in the leading universities of the country. Since graduate schools usually require a reading knowledge of French or German, frequently both, students should elect adequate work in these languages. Seminar courses and thesis work are strongly recommended for their training in research techniques.

Admission Requirements

Applicants for admission to the freshman class must qualify by one of the following methods:

1. Graduation from an approved course of study in an accredited secondary school, including prescribed subjects listed below.

2. Completion of fifteen acceptable secondary school units with a degree of proficiency satisfactory to the Department of Admissions.

3. Examinations.

(Certificate of entrance examinations passed for admission to recognized colleges and technical schools may be accepted.)

Prescribed Subjects for Admission

College of Liberal Arts

The College of Liberal Arts offers courses leading either to the A.B. or to the S.B. degree. According to the degree which he expects to receive, the student will present for admission one or the other of the groups of prescribed subjects listed below.

<i>A.B. Curriculum</i>		<i>S.B. Curriculum</i>	
	Units		Units
English (4 years)	3	English (4 years)	3
Foreign Language	3	†Mathematics	2 or 3
(Ancient or Modern)		Natural Science	1
Social Studies	2	*Electives	8 or 9
*Electives	7		
	15		15
Total		Total	

A unit is a credit given to an acceptable secondary school course which meets at least four times a week for periods of not less than forty minutes each throughout the school year.

Entrance examinations are not required of students whose transcripts of record are acceptable, but the Department of Admissions reserves the right to require a candidate to present himself for examination in any subjects that it may deem necessary because of some weakness in his secondary school record.

*Not less than four of the "electives" must be in one or more of the following academic branches: Languages, Natural Science, Mathematics, Social Sciences, History.

†Students expecting to major in chemistry, mathematics, or physics must offer 3 units.

Other Requirements

These formal requirements are necessary and desirable in that they tend to provide all entering students with a common ground upon which the first year of the college curriculum can be based. But academic credits alone are not an adequate indication of a student's ability to profit by a college education. Consequently the Department of Admissions takes into consideration, along with the formal requirements, many other factors regarding candidates for the freshman class. A student's interests and aptitudes in so far as they can be determined, his capacity for hard work, his attitude toward his classmates and teachers in high school, his physical stamina, and most important of all — his character, all these considerations are carefully weighed. In this way the University seeks to select for its student body those who not only meet the academic admission requirements but who also give promise of acquitting themselves creditably in the rigorous program of training afforded by the co-operative plan and of later becoming useful members of society.

Personal Interview

Candidates for admission should communicate with the Director of Admissions, who will advise them frankly on the basis of past experience. A personal interview is always preferred to correspondence, and parents are urged to accompany their sons whenever this is possible. Effective guidance depends in large measure upon a complete knowledge of a candidate's background and problems. Parents invariably are able to contribute much information that aids the admissions officer in arriving at a decision. In general, a student is likely to be more successful in his college work if he does not enroll under the age of seventeen.

Candidates are urged to visit the office of Admissions for personal interview if it is possible for them to do so before submitting their applications. Office hours of the Department are from 9:00 A.M. to 4:00 P.M. daily; Saturdays to 12:00 M. The Director of Admissions will interview applicants on Wednesday evenings but by appointment only.

Application for Admission

Each applicant for admission is required to fill out an application blank whereon he states his previous education, as well as the names of persons to whom reference may be made in regard to his character and previous training.

An application fee of five dollars (\$5.00) is required when the application is filed. This fee is non-returnable.

The last page of this catalogue is in the form of an application blank. It should be filled out in ink and forwarded with the required five dollar fee to Director of Admissions, Northeastern University, Boston, Mass. Checks should be made out to Northeastern University.

Upon receipt of the application, properly filled out, the College at once looks up the applicant's references and secondary school records. When replies have been received to the various inquiries, the applicant is informed as to his eligibility for admission.

Application should be filed not later than April 15, thus allowing ample time for the investigation of the applicant's secondary school records before he enrolls in the College.

The University reserves the right to place any entering student upon a period of trial. Whether he shall be removed from trial at the end of this time or requested to withdraw will be determined by the character of the work he has accomplished and his conduct during this trial period.

Registration

Eligibility for admission does not constitute registration. Freshmen register at the University on May 3, 1943 or July 12, 1943. No student is considered to have met the requirements for admission until he has successfully passed the required physical examination.

Advanced Standing

Students transferring from approved colleges will be admitted to advanced standing provided their records warrant it. Whenever a student enters with advanced standing and later proves to have had inadequate preparation in any of his pre-requisite subjects, the Faculty reserves the right to require the student to make up such deficiencies.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their initial inquiry. Students admitted to advanced standing are not eligible for placement at co-operative work until they have completed a full year of academic work at the University.

Entrance Examinations

Students who are deficient in required units for admission may remove these deficiencies by examination. Such examinations are held at the University unless special arrangements are made with the Department of Admissions to administer them elsewhere. Students are advised to take such examinations on the earliest

possible date in order that any deficiencies which they fail to clear may be made up in time to permit registration with the desired class and division.

The time of examinations is as follows:

10:00 A.M. to 12:00 M.

1:00 P.M. to 3:00 P.M.

During the current year examinations will be given in April and June. All other examinations will be given by special assignment.

Outline of Freshman Courses

The first year is a period of full time study during which the student must demonstrate his fitness for the program which he has elected. Students who are unsuccessful in the basic courses of the freshman year will not be permitted to continue with their advanced program, but will be advised to change their goal and type of training. In some instances this will mean change to another curriculum at Northeastern; in others, transfer to another institution. *The freshman courses are so arranged as to permit change of objective at the end of the first year with a minimum loss of time.*

Freshman Programs

1. For students majoring in Economics, English, English-Journalism, Psychology, Sociology, or taking the Pre-Legal program.

No.	Course	S.H.	No.	Course	S.H.
E 1-A	English I.....	3	E 2-A	English I.....	3
H 1	History of Civilization..	4	H 2	History of Civilization..	4
Gv 1	American Government..	3	Gv 2	American Government..	3
P 31	Intro. to Physics or....	4	P 32	Intro. to Physics or....	4
B 1	General Zoology.....	3	B 2	General Botany.....	3
F3, G 1, or Sp 1	French, German, or Spanish.....	3	F 4, G 2, or Sp 2	French, German, or Spanish.....	3
PE 1	Hygiene.....	1		Orientation.....	0
	Physical Training.....	0		Physical Training.....	0
		17-18			16-17

2. For V-1 students majoring in Economics, English, English-Journalism, Psychology, or taking the Pre-Legal program.

No.	Course	S.H.	No.	Course	S.H.
E 1-A	English I.....	3	E 2-A	English I.....	3
H 1	History of Civilization..	4	H 2	History of Civilization..	4
M 31	Mathematics I.....	3	M 32	Mathematics II.....	3
P 31	Intro. to Physics.....	4	P 32	Intro. to Physics.....	4
F 3, G 1, or Sp 1	French, German, or Spanish.....	3	F 4, G 2, or Sp 2	French, German, or Spanish.....	3
PE 1	Hygiene.....	1		Orientation.....	0
	Physical Training.....	0		Physical Training.....	0
		18			17

3. For students majoring in Chemistry, Mathematics, and Physics.

No.	Course	S.H.	No.	Course	S.H.
E 1-A	English I.....	3	E 2-A	English I.....	3
M 1, M 3	Algebra, Trigonometry..	5	M 4	Analytic Geometry....	5
P 1	Physics I.....	3	P 2	Physics I.....	3
Ch 1	General Chemistry.....	4	Ch 2	General Chemistry.....	4
F 3, G 1, or Sp 1	French, German, or Spanish.....	3	F 4, G 2, or Sp 2	French, German, or Spanish.....	3
PE 1	Hygiene.....	1		Orientation.....	0
	Physical Training.....	0		Physical Training.....	0
		19			18

4. For students majoring in Biology, or taking the Pre-Dental or Pre-Medical program.

No.	Course	S.H.	No.	Course	S.H.
E 1-A	English I.....	3	E 2-A	English I.....	3
M 1, M 3	Algebra, Trigonometry..	5	M 4	Analytic Geometry....	5
B 1	General Zoology.....	3	B 2	General Botany.....	3
Ch 1	General Chemistry.....	4	Ch 2	General Chemistry.....	4
F 3, G 1, or Sp 1	French, German, or Spanish.....	3	F 4, G 2, or Sp 2	French, German, or Spanish.....	3
PE 1	Hygiene.....	1		Orientation.....	0
	Physical Training.....	0		Physical Training.....	0
		19			18

Requirements for Graduation

In order to qualify as a candidate for the A.B. or S.B. degree a student must complete with a degree of proficiency acceptable to the faculty a total of not less than 135 semester hours of credit including ten semester hours of co-operative work credit.* College attendance for 115 weeks plus 80 weeks of co-operative work is needed to fulfil this requirement.

The above total must include:

1. The prescribed program for the freshman year.
2. The courses specified in the upperclass curriculum for the student's major field. (See pages 76 to 78.)
3. From twelve to sixteen semester hours, representing six term courses, in each of two minor fields.
4. Twelve semester hours in foreign language. The elementary course in a language will not be accepted in fulfilment of this requirement unless followed by a second year in the same language.

Graduation with Honor

Candidates who have achieved distinctly superior attainment in their academic work will be graduated with honor. Upon special vote of the faculty a limited number of this group may be graduated with high honor or with highest honor. Students must have been in attendance at the University at least three years before they may become eligible for honors at graduation.

*Students may substitute ten semester hours of academic work for this requirement. However, students who undertake any co-operative work assignment must also meet the requirements of the Department of Co-operative Work before they become eligible for their degrees.

Curricula Requirements

The following fields of study are approved as major fields in the College of Liberal Arts: biology, chemistry, economics, English, English-journalism, mathematics, physics, pre-medical (biology-chemistry), psychology, and sociology. In addition two-year programs are approved for pre-dental, pre-medical, and pre-legal students.

Required *upperclass* courses for students in each field are listed below. Upon petition to the faculty, substitutions may be permitted in some instances.

Biology

COURSES IN BIOLOGY	B 3 Invertebrate Zoology	B 4 Invertebrate Zoology
	B 5 Vertebrate Zoology	B 6 Vertebrate Zoology
	B 17 Mammalian Anatomy	B 18 Mammalian Anatomy
	B 61 Seminar	B 62 Seminar
	fourteen elective semester hours.	
COURSES IN OTHER FIELDS	six semester hours in French or German, eight semester hours in physics, six semester hours in English.	

Chemistry

COURSES IN CHEMISTRY	Ch 9 Qualitative Analysis	Ch 12 Quantitative Analysis
	Ch 11 Qualitative Analysis Laboratory	Ch 14 Quantitative Analysis Laboratory
	Ch 13 Quantitative Analysis	
	Ch 17 Quantitative Analysis Laboratory	
	Ch 31 Organic Chemistry	Ch 32 Organic Chemistry
	Ch 33 Organic Chemistry Laboratory	Ch 34 Organic Chemistry Laboratory
	Ch 35 Organic Chemistry	Ch 40 Physical Chemistry
	Ch 39 Organic Chemistry Laboratory	
	Ch 45 Physical Chemistry	Ch 46 Physical Chemistry
	Ch 51 Sources of Information	Ch 48 Colloidal Chemistry
COURSES IN OTHER FIELDS	Ch 63 Advanced Chemistry	Ch 64 Advanced Chemistry
	six semester hours in French or German, six semester hours in mathematics, twelve semester hours in physics, and sixteen semester hours in non-scientific fields.	

Economics

COURSES IN ECONOMICS	Ec 3 Economic Principles	Ec 4 Economic Principles
	Ec 5 Economic Problems	Ec 6 Economic Problems
	Ec 7 Money and Banking	Ec 8 Business Cycles
	Ec 11 Labor Problems	Ec 14 International Economic Relations
	Ec 15 History of Economic Thought	Ec 16 Advanced Economic Theory
	Ec 17 Statistics	Ec 18 Statistics
	six elective semester hours in economics.	
COURSES IN OTHER FIELDS	six semester hours in modern languages, six semester hours in English, twelve semester hours in the allied social sciences.	

English

COURSES IN ENGLISH	E 5 Advanced Composition	E 6 Advanced Composition
	E 15 English Literature	E 16 English Literature
	E 17 Drama before Shakespeare	E 18 Chaucer
	E 19 Shakespeare	E 20 Shakespeare
	E 23 Seventeenth and Eighteenth Century Prose	E 24 Nineteenth Century Prose
	E 25 American Literature	E 26 American Literature
COURSES IN OTHER FIELDS	E 29 Great European Writers	E 30 Great European Writers
	six semester hours in modern languages, sixteen semester hours in the social sciences.	

English-Journalism

COURSES IN ENGLISH	E 5 Advanced Composition	E 6 Advanced Composition
	E 9 Journalism I	E 10 Journalism I
	E 11 Journalism II	E 12 Journalism II
	E 15 English Literature	E 16 English Literature
	E 23 Seventeenth and Eighteenth Century Prose	E 24 Nineteenth Century Prose
	E 25 American Literature	E 26 American Literature
COURSES IN OTHER FIELDS	E 29 Great European Writers	E 30 Great European Writers
	six semester hours in modern languages and sixteen semester hours in the social sciences.	

Mathematics

COURSES IN MATHEMATICS	M 5 Differential Calculus	M 6 Integral Calculus
	M 7 Differential Equations I	M 8 Differential Equations II
	M 15 Advanced Calculus	M 16 Advanced Calculus
	M 17 Series	M 18 Theory of Equations
	six elective semester hours.	
COURSES IN OTHER FIELDS	six semester hours in French or German, twelve semester hours in physics, and ten semester hours in non-scientific fields.	

Physics

COURSES IN PHYSICS	P 3 Physics II	P 4 Physics II
	P 5 Physics Laboratory	P 6 Physics Laboratory
	P 9 Optics	P 10 Optics
	P 13 Acoustics	P 14 Acoustics
	P 15 Modern Physics	P 16 Modern Physics
COURSES IN OTHER FIELDS	six elective semester hours.	
	six semester hours in French or German, twelve semester hours in mathematics, and ten semester hours in non-scientific fields.	

Pre-Dental

(See Page 65)

Pre-Legal

(See Page 66)

Pre-Medical (Biology-Chemistry)

COURSES IN BIOLOGY	B 3 Invertebrate Zoology	B 4 Invertebrate Zoology
	*B 5 Vertebrate Zoology	B 6 Vertebrate Zoology
	*B 17 Mammalian Anatomy	B 18 Mammalian Anatomy
COURSES IN CHEMISTRY	*Ch 9 Qualitative Analysis	Ch 12 Quantitative Analysis
	*Ch 11 Qualitative Analysis Laboratory	Ch 14 Quantitative Analysis Laboratory
	Ch 25 Organic Chemistry	Ch 26 Organic Chemistry
	Ch 27 Organic Chemistry Laboratory	Ch 27 Organic Chemistry Laboratory
COURSES IN OTHER FIELDS	six semester hours in French or German, eight semester hours in physics, twelve semester hours in non-science fields.	

Psychology

COURSES IN PSYCHOLOGY	Ps 1 Introduction to Differential Psychology	Ps 2 General Psychology
	Ps 3 Experimental Psychology	Ps 4 Differential Psychology
	Ps 5 Educational Psychology	Ps 8 Social Psychology, Theory and Methods
	Ps 7 Social Psychology of Every Day Life	Ps 10 Abnormal Psychology
	Ps 9 Psychology of Personality	Ps 14 Advanced Experimental Laboratory
	Ps 13 Psychological Testing	
	six elective semester hours in psychology or sociology.	
COURSES IN OTHER FIELDS	six semester hours in French or German, six semester hours in English, twelve semester hours in allied social sciences.	

Sociology

COURSES IN SOCIOLOGY	S 1 Introduction to Sociology	S 2 Principles of Sociology
	S 3 Social Problems	S 4 Social Pathology
	S 5 Criminology	S 6 Penology
	S 7 Principles of Social Ethics	S 8 Problems of Social Ethics
	S 9 The Family	S 10 The Family
	S 11 Social Control	S 12 Social Progress
	S 15 History of Sociological Thought	
	four elective semester hours in sociology or psychology.	
COURSES IN OTHER FIELDS	six semester hours in modern languages, six semester hours in English, twelve semester hours in allied social sciences.	

Minor Fields

Students may elect their minor fields after consultation with their faculty advisers. In addition to the major fields listed the following subjects are available as minors: education, French, German, government, history, philosophy, physical education, and Spanish.

*Not required in two year program. See page 67.

Graduate Study

GRADUATE work in physics and in chemistry is offered to properly qualified students desiring to undertake advanced study leading to the degree of Master of Science. Candidates for admission to this program must be high ranking students who have completed, or will have completed prior to admission to the graduate program, the requirements for the Bachelor of Science degree with major in chemistry or physics at an institution of recognized standing. At the present time the program is limited to teaching fellows at Northeastern University.

Requirements for the Master of Science Degree

Candidates for the degree of Master of Science in Chemistry or Master of Science in Physics must have completed satisfactorily 30 semester hours of study beyond that required for the Bachelor's degree. Of these, 18 semester hours (including thesis) must be graduate courses in the major field of chemistry or physics; the remaining 12 credits may be earned in a minor field.

The graduate courses are listed under the departments giving graduate work. The minor credits may be selected from graduate courses or from certain advanced undergraduate courses called "B" courses. (Graduate students must obtain a grade of B or better to receive credit for "B" courses.)

Candidates are also required to complete a satisfactory thesis as a partial requirement for the Master's degree. Theses must be completed in the field of major study and will be credited as eight semester hours toward the major requirement. Theses must be completed at least four weeks in advance of the date on which the degree is to be awarded.

Finally, candidates are required to pass satisfactorily a comprehensive examination which may be written or oral at the discretion of the department concerned.

List of "B" Courses

The "B" courses are divided into two groups. The first group is comprised of subjects which may be elected to complete the requirements for minor credits. The second group includes subjects approved for graduate study only in limited amount.

The individual programs of study must have the approval of the Director of Graduate Study who also acts as registration officer for graduate students.

B Courses Group I

<i>No.</i>	<i>Course</i>	<i>Credits</i>
B 3	Invertebrate Zoology	2
B 4	Invertebrate Zoology	2
B 5	Vertebrate Zoology	2
B 6	Vertebrate Zoology	2
B 15	Parasitology	2
B 16	Parasitology	2
B 17	Mammalian Anatomy	2
B 18	Mammalian Anatomy	2
B 25	General Entomology	3
B 26	Economic Entomology	3
Ch 41	Physical Chemistry	3½
Ch 42	Physical Chemistry	3½
Ch 63	Advanced Chemistry	2
Ch 64	Advanced Chemistry	3
Ch E 5	Unit Operations Lab	1½
Ch E 6	Unit Operations Lab	1½
Ch E 11	Chem. Eng. Thermodynamics	2
EL 21	Electronics	1
EL 22	Electronics	2
M 7	Differential Equations I	2½
M 8	Differential Equations II	3
M 15	Advanced Calculus	3
M 16	Advanced Calculus	3
M 17	Series	3
M 18	Theory of Equations	3
P 9	Optics	3
P 10	Optics	3
P 15	Modern Physics	3
P 16	Modern Physics	3

B Courses Group II

<i>No.</i>	<i>Course</i>	<i>Credits</i>
Ec 11	Labor Problems	3
Ec 14	International Economic Relations	3
Ec 15	History of Economic Thought	2
Ec 16	Advanced Economic Theory	2
Ed 1	History of Education	2
Ed 2	History of Education	2
Ed 3	Educational Measurements	2
Ed 4	Educ. Org. and Adm.	2
Gv 3	Comparative Government	2
Gv 4	Comparative Government	2
Gv 7	Origins of Political Theory	2

Gv 8	Modern Political Theory.....	2
H 7	England to 1688.....	2
H 8	England since 1688.....	2
H 11	Latin American History.....	2
H 12	Latin American History.....	2
H 15	Far Eastern Relations.....	2
Ph 3	History of Philosophy.....	2
Ph 4	History of Philosophy.....	2
Ps 5	Educational Psychology.....	3
Ps 7	Social Psychology of Everyday Life.....	2
Ps 8	Social Psychology, Theory and Methods...	2
S 7	Principles of Social Ethics.....	2
S 8	Problems of Social Ethics.....	2

Synopses of Courses of Instruction

On the pages which follow are given the synopses of courses offered in the several curricula of the College. Courses offered in the first semester bear odd numbers, and those offered in the second semester bear even numbers.

The term pre-requisite indicates a course that must be completed with a passing grade before a student will be permitted to register for the advanced course to which it applies. The term preparation indicates a course of such a preparatory nature that a student undertaking an advanced course without having had the preparation course specified, will ordinarily find himself greatly handicapped, and may not register in the advanced course without the consent of the instructor.

Freshman courses extend over a full semester of 18 weeks. Upperclass courses are uniformly 10 weeks in length each term. Unless otherwise noted all undergraduate courses meet for three class periods each week.

The University reserves the right to withdraw any course in which there is insufficient enrolment.

Biology

Botany Zoology

B 1-A General Biology

An introductory course in biology dealing with animals and plants and their relations to their environment. The fundamental phenomena of living things are stressed. General biological laws and theories are discussed. The laboratory work illustrates the lectures.

4 semester hour credits (4 cl., 3 lab.)

B 1 General Zoology

An introductory course dealing with the basic principles of zoology. A survey of the main types of animals; their classification, structure, life history, distribution, and economic value. The laboratory work illustrates the lectures.

3 semester hour credits (2 cl., 2 lab.)

B 2 General Botany

An introductory course dealing with the basic principles of botany. A general survey of the more important plant types throughout the vegetable kingdom; their classification, structure, life history,

distribution, and economic value. The fundamentals of plant physiology are stressed. The laboratory work illustrates the lectures.

3 semester hour credits (2 cl., 2 lab.)

B 3 *Invertebrate Zoology*

This course deals with the comparative development and structure of the organic systems of invertebrate animals as represented by the following phyla: Protozoa, Porifera, Coelenterata, Ctenophora, Platyhelminthes, Nemathelminthes, Trochelminthes, and Molluscoidea; and their biological and ecological relationships. The laboratory work consists of detailed dissection of representative types.

Pre-requisite: B 1

2 semester hour credits (2 cl., 4 lab.)

B 4 *Invertebrate Zoology*

Continues and presupposes course B 3. In this part of the course, the lectures deal with the comparative development and structure of the various organ systems of invertebrate animals as represented by the following invertebrate phyla: Coelhelminthes, Mollusca, Arthropoda, and Echinodermata; and their biological and ecological relationships. The laboratory work consists of detailed dissection of representative types.

Preparation: B 3

2 semester hour credits (2 cl., 4 lab.)

B 5 *Vertebrate Zoology*

This course deals with the comparative anatomy of the integument; the skeletal, muscular, digestive and respiratory systems of the principal classes of vertebrates. The laboratory work consists of detailed dissection of representative types.

Pre-requisite: B 1

2 semester hour credits (2 cl., 4 lab.)

B 6 *Vertebrate Zoology*

Continues and presupposes course B 5. In this part of the course, the lectures deal with the comparative anatomy of the vascular, excretory, reproductive and nervous systems together with the organs of special sense of the principal classes of vertebrates. The laboratory work consists of detailed dissection of representative types.

Preparation: B 5

2 semester hour credits (2 cl., 4 lab.)

B 7 Animal Physiology

This course deals with the functions of vertebrates with particular emphasis on mammalian and human physiology. Demonstrations are given from time to time and are arranged to correspond as closely as possible with the lecture work.

Preparation: B 6

2 semester hour credits

B 8 Animal Physiology

Continues and presupposes B 7.

Preparation: B 7

2 semester hour credits

B 9 Principles of Genetics

This course deals with the laws of variation and inheritance; their application to man and to domestic animals and plants.

Pre-requisite: B 1, B 2

2 semester hour credits

B 10 Principles of Genetics

Continues and presupposes B 9.

Preparation: B 9

2 semester hour credits

B 11 Animal Histology

The lectures deal with the normal microscopic anatomy of the cell, histogenesis, and the fundamental tissues of various invertebrates and vertebrates. The laboratory work illustrates the lectures by means of microscopic preparations.

Pre-requisite: B 6

2 semester hour credits (2 cl., 2 lab.)

B 12 Animal Histology

Continues and presupposes course B 11. In this part of the course a detailed study is made of the normal microscopic anatomy of the organs of the lower and higher vertebrates. The laboratory work illustrates the lectures by means of microscopic preparations.

Preparation: B 11

2 semester hour credits (2 cl., 2 lab.)

B 13 Vertebrate Embryology

The lectures deal with the early and late stages of development of the Amphioxus, the Teleost, and the frog. The laboratory work illustrates the lectures.

Pre-requisite: B 6

2 semester hour credits (2 cl., 2 lab.)

B 14 Vertebrate Embryology

Continues and presupposes B 13. In this part of the course the lectures deal with the early and late stages of development of the chick and pig. The laboratory work illustrates the lectures.

Preparation: B 13

2 semester hour credits (2 cl., 2 lab.)

B 15 General Parasitology

This course deals with the more important species of parasites and their relation to disease in man and the domestic animals. In this part of the course the parasitic protozoa and flat worms are considered.

Pre-requisite: B3, B4

2 semester hour credits (2 cl., 2 lab.)

B 16 General Parasitology

Continues and presupposes B 15. In this part of the course the parasitic round worms and arthropods are considered.

Preparation: B 15

2 semester hour credits (2 cl., 2 lab.)

B 17 Mammalian Anatomy

An advanced laboratory course in the dissection of a mammal. In this part of the course, the skeletal, muscular, digestive, and respiratory systems are considered.

Pre-requisite: B 6

2 semester hour credits (1 cl., 6 lab.)

B 18 Mammalian Anatomy

Continues and presupposes B 17. In this part of the course, the urogenital, circulatory, and nervous systems are considered together with the organs of special sense.

Preparation: B 17

2 semester hour credits (1 cl., 6 lab.)

B 19 Histological Technique

This course is designed to present the fundamentals of histological technique. Lectures deal with the various methods of fixation, clearing, hardening, embedding, section cutting, and staining of various vertebrate, invertebrate, and plant tissues. Emphasis is laid upon the laboratory work, which consists of preparing histological slides.

Preparation: B 12

2 semester hour credits (1 cl., 6 lab.)

B 20 Histological Technique

Continuation of course B 19.

Preparation: B 19

2 semester hour credits (1 cl., 6 lab.)

B 21 History of Biology

A course treating the development of biological sciences from the earliest times to the present, and tracing the history of biological investigations.

2 semester hour credits

B 22 History of Biology

A continuation of B 21.

2 semester hour credits

B 25 General Entomology

This course deals with the structure, classification, habits, life histories, and distribution of insects. Detailed laboratory work of representative types.

Pre-requisite: B 1

3 semester hour credits (3 cl., 4 lab.)

B 26 Economic Entomology

Lectures, conferences, and laboratory work. This course deals with the life histories and habits of injurious insects and of means for their control.

Preparation: B 1, B 25

3 semester hour credits (3 cl., 4 lab.)

B 61 Seminar

Assigned readings and reports on selected topics. May be elected with the consent of the department by qualified seniors majoring in biology.

2 semester hour credits

B 62 Seminar

A continuation of B 61.

Preparation: B 61

2 semester hour credits

B 65 Thesis

See statement on Theses, page 139.

3 semester hour credits

B 66 Thesis

A continuation of B 65.

3 semester hour credits

Chemistry

Ch 1 General Chemistry

The fundamental ideas of matter and energy; the properties of gases, liquids, and solids; molecular weights; equations, atomic structure, classification of the elements; ionic reactions; the chemistry of the non-metals; and radioactivity are among the topics which are covered in the course.

4 semester hour credits (3 cl., 3 lab.)

Ch 2 General Chemistry

A continuation of Ch 1. Modern ideas covering the theory of solutions of electrolytes are discussed together with experimental facts. The chemistry of the metals is covered thoroughly, and time is devoted to an introduction to organic chemistry. The latter part of the course is given to qualitative analysis with particular emphasis on the laboratory work.

Preparation: Ch 1

4 semester hour credits (3 cl., 3 lab.)

Ch 9 Qualitative Analysis

The object of this course is to give the student knowledge of the various fundamental qualitative laws and principles. A portion of the time is devoted to the formulation of numerical terms which are essential to the understanding of the mass action law, ionic equilibria, solubility product, hydrolysis, and redox instants. The use of the newer spot tests is stressed and, where possible, their reactions explained. Whenever necessary, lectures demonstrating the various semi-micro techniques are given, as well as those designed to illustrate more fundamental properties of solutions.

Pre-requisite: Ch 1, Ch 2

3 semester hour credits (4 cl.)

Ch 11 Qualitative Analysis Laboratory

This course, which is carried out on a semi-micro scale, applies the material covered in Ch 9 to actual problems. After some preliminary experiments, certain procedures are combined and the separations and identifications made on both known and unknown solutions. Finally, these are combined into a complete, systematic scheme which is applied to artificially prepared mixtures and industrial materials. Careful manipulations, thoroughness in observation, and accuracy in arriving at conclusions are expected of each student.

Must be taken concurrently: Ch 9

2½ semester hour credits (10 lab.)

Pre-requisite: Ch 1, Ch 2

Ch 12 Quantitative Analysis

It is the purpose of this course to give to the student a realization of the scientific development of quantitative methods. Each of the major operations such as weighing, measurement of volumes, titration, filtration, ignition, and combustion, is considered from the standpoint of the theoretical principles involved, and with due consideration of the manipulative technique necessary.

This is followed by the combination of these operations and their application to actual analysis including a comprehensive study of volumetric methods and of the more elementary parts of gravimetric analysis.

As the correct calculation of analytical results is of no less importance than the actual procedures of analysis, a number of problems forms a very important part of the course.

Preparation: Ch 9

2 semester hour credits

Must be taken concurrently: Ch 14

Ch 13 Quantitative Analysis

This course, a continuation of Ch 12, is similarly conducted. After consideration of the more advanced parts of gravimetric analysis and of systematic mineral procedures, the remainder of the course consists of a critical discussion of common technical methods, including the standard ones for the analysis of steel, non-ferrous alloys, fuels, oils, gas, water, fertilizers, foods, etc.

Preparation: Ch 12

2 semester hour credits

Must be taken concurrently: Ch 15

Ch 14 Quantitative Analysis Laboratory

This is a laboratory course intended to illustrate by actual use the various analytical methods considered in Ch 12. After certain preliminary experiments designed to acquaint the student with the apparatus used, volumetric analysis, including acidimetry and alkalimetry, oxidation, reduction, and precipitation methods are taken up. This is followed by simple gravimetric analysis.

Preparation: Ch 11

1½ semester hour credits (7 lab.)

Must be taken concurrently: Ch 12

Ch 15 Quantitative Analysis Laboratory

This course includes not only the usual illustrative gravimetric determinations, but also electrolytic, electrometric, combustion, and optical methods.

In the latter half of the course actual industrial methods are used so that at its completion the students should be able to perform satisfactorily any ordinary analysis.

Preparation: Ch 14

2 semester hour credits (9 lab.)

Must be taken concurrently: Ch 13

Ch 25 Organic Chemistry

A study of the reactions and properties of aliphatic compounds. Class relationships, structural formulas, and reaction mechanisms are discussed in detail. Not open to students majoring in Chemistry.

Pre-requisite: Ch 1, Ch 2

3 semester hour credits (4 cl.)

Must be taken concurrently: Ch 27

Ch 26 Organic Chemistry

A continuation of Ch 25 dealing with the preparation and properties of the aromatic compounds. Not open to students majoring in Chemistry.

Pre-requisite: Ch 1, Ch 2

3 semester hour credits (4 cl.)

Preparation: Ch 25

Must be taken concurrently: Ch 28

Ch 27 Organic Chemistry Laboratory

Preparations and reactions of the aliphatic compounds. Not open to students majoring in Chemistry.

Pre-requisite: Ch 1, Ch 2

1 semester hour credit (5 lab.)

Must be taken concurrently: Ch 25

Ch 28 Organic Chemistry Laboratory

Preparations and reactions of the aromatic compounds. Not open to students majoring in Chemistry.

Pre-requisite: Ch 1, Ch 2

1 semester hour credit (5 lab.)

Preparation: Ch 27

Must be taken concurrently: Ch 26

Ch 31 Organic Chemistry

A study of the basic principles of the aliphatic organic compounds. The resemblance of classes is stressed, and emphasis is placed on genetic charts. The industrial significance of the subject is discussed to show the practical nature of organic chemistry.

Preparation: Ch 40

2 semester hour credits

Must be taken concurrently: Ch 33

Ch 32 Organic Chemistry

A continuation of Ch 31, dealing with the preparation and characteristic reactions of the aromatic organic compounds. Special attention is given to polymerization, diazotization, dyes, and the use of catalysts, nitration, and sulfonation.

A few of the more important heterocyclic compounds are studied.

Preparation: Ch 31

2 semester hour credits

Must be taken concurrently: Ch 34

Ch 33 Organic Chemistry Laboratory

Preparations and reactions designed to teach the laboratory technique involved in organic chemistry. The method of keeping notes in the work performed and reactions involved is stressed.

Preparation: Ch 40

1 semester hour credit (5 lab.)

Must be taken concurrently: Ch 31

Ch 34 Organic Chemistry Laboratory

This is a continuation of Ch 33. The preparations in this course serve to acquaint the student with such types of chemical reactions as sulfonation, the Grignard reaction, the Perkins reaction, Skraup's synthesis, the Friedel-Crafts' reaction, and the preparation of dyes.

In addition to the manipulation techniques taught in Ch 33 this course introduces the use of vacuum distillations, fractional crystallization, and separations by physical and chemical means.

Preparation: Ch 33

1 semester hour credit (5 lab.)

Must be taken concurrently: Ch 32

Ch 35 Organic Chemistry

A continuation of Ch 32, this course includes a study of the preparation and reactions of heterocyclic and alicyclic compounds.

Preparation: Ch 32

2 semester hour credits

Must be taken concurrently: Ch 37

Ch 37 Organic Chemistry Laboratory

The purpose of this course is to familiarize the student with the chemical and physical tests used in qualitative organic analysis. A series of experiments, based on the classification of reactions of organic compounds, serves as a basis for the examination of simple liquid and simple solid compounds and the preparation of suitable derivatives of them.

Preparation: Ch 34

2 semester hour credits (8 lab.)

Must be taken concurrently: Ch 35

Ch 40 Physical Chemistry

This course begins with a short resume of the field of physical chemistry and its relationship to the other courses in chemistry and chemical engineering. Atomic and molecular weights, and the properties of gases, liquids, solids, ionized, non-ionized, and colloidal solutions are then taken up.

Pre-requisite: Ch 12, Ch 14

2½ semester hour credits (3 cl., 2 lab.)

Preparation: Ch 13, Ch 15

Ch 41 *Physical Chemistry*

A continuation of Ch 40, this course includes a consideration of the following topics: rates of reaction, homogeneous and heterogeneous equilibrium, and thermochemistry.

Pre-requisite: Ch 13, Ch 15

3½ semester hour credits (4 cl., 4 lab.)

Preparation: Ch 40

Ch 42 *Physical Chemistry*

A continuation of Ch 41 including electrical conductance, electrolytic equilibrium, electrolysis, photochemistry, and atomic structure.

Preparation: Ch 41

3½ semester hour credits (4 cl., 4 lab.)

Ch 48 *Colloidal Chemistry*

A study of the preparation and properties of suspensoids, emulsoids, emulsions, and gels.

Pre-requisite: Ch 41

2½ semester hour credits (3 cl., 2 lab.)

Ch 51 *Sources of Information*

This course is intended to acquaint the chemical student with the constantly increasing volume of scientific literature pertaining to the field of chemistry.

After a brief outline of the entire field of scientific literature and a description of various methods of library procedure, the various available sources of scientific information are investigated. A series of individual library problems, in which the student is required to apply the information obtained in the classroom, forms a very important part of the course.

Pre-requisite: Ch 1, Ch 2

1 semester hour credit (1 cl.)

Ch 52 *History of Chemistry*

A study of the development of scientific theories and contributions of workers in the field of chemistry. Elective for students majoring in chemistry.

2 semester hour credits

Ch 63 *Advanced Chemistry*

A survey of the most recent developments in physical chemistry and inorganic chemistry.

Pre-requisite: Ch 42

2 semester hour credits

Ch 64 *Advanced Chemistry*

A survey of the most recent developments in organic chemistry theory and practice.

Pre-requisite: Ch 35

3 semester hour credits (3 cl., 3 lab.)

Ch 65 *Thesis*

Original experimental work carried out under the direction of some member of the chemistry department staff. Elective for qualified students majoring in chemistry.

Pre-requisite: Ch 42

3 semester hour credits (9 lab.)

Ch 66 *Thesis*

A continuation of Ch 65.

Pre-requisite: Ch 42

4 semester hour credits (12 lab.)

Ch 101 *Advanced Physical Chemistry*

A study of advanced topics in physical chemistry.

(For graduate students only.)

3 semester hour credits

Ch 102 *Advanced Physical Chemistry*

A continuation of Ch 101.

(For graduate students only.)

3 semester hour credits

Ch 103 *Advanced Organic Chemistry*

A study of special topics in advanced organic chemistry.

(For graduate students only.)

3 semester hour credits

Ch 104 *Advanced Organic Chemistry*

A continuation of Ch 103.

(For graduate students only.)

3 semester hour credits

Ch 105 *Graduate Thesis*

Thesis work for graduate students.

2-4 semester hour credits

Ch 106 Graduate Thesis

Thesis work for graduate students.

2-4 semester hour credits

Ch 107 Graduate Thesis

Thesis work for graduate students.

2-4 semester hour credits

Ch 108 Graduate Thesis

Thesis work for graduate students.

2-4 semester hour credits

Co-ordination

C 1 Vocational Conference

This course is designed to bring about analytical thinking and systematic planning of the "after-graduation-employment" problem. It is conducted as an open discussion class by the Department of Co-operative Work. Each Co-ordinator has in class those students whom he has placed and supervised on co-operative work. Each student analyzes and applies to himself as the "product" the fundamental principles of merchandising. Wherever practicable prominent men who are leaders in the fields of employment counselling business, or engineering present the employers' viewpoints. Thus the graduating seniors are brought face to face during the year with one of the most important and perplexing problems of life, namely, how to "sell their services", thereby aiming to bring a co-ordinated training of theory and practice to a logical conclusion.

½ semester hour credit (2 cl.)

C 2 Vocational Conference

This course is the sequel to C 1 and consists of the practical application of the techniques of job-getting which have been analyzed and discussed in that course. It is conducted on a conference rather than on a class basis, the major portion of the time being devoted to the collection of employment prospects, to the planning and writing of letters to and securing interviews with prospective employers. It is intended that this course shall culminate in the attainment by each student of his after-graduation job.

½ semester hour credit (2 cl.)

Economics

Ec 1 Economic Geography

In order to provide an adequate background for the study of economics this first course emphasizes the economic resources of our country and the part played by these resources in the development of our modern industrial society. The course is more concerned with promoting the comprehension of basic concepts than with stressing encyclopedic knowledge of masses of details. In the latter part of the semester frequent use is made of motion pictures to illustrate the processes and peculiar economic characteristics of specific industries.

4 semester hour credits (4 cl.)

Ec 2 Commercial and Industrial History of the U. S.

This course is designed to complete the factual background for the study of theoretical economics. The economic development of the United States is traced from the colonial period to the present with special emphasis upon the period since the Civil War. Stress is laid upon the importance of economic factors and changes in our history in the description of the development of manufacturing, agriculture, domestic and foreign commerce, finance and banking, transportation and labor organizations. Consideration is given to European developments which have been closely related to those of the United States.

4 semester hour credits (4 cl.)

Ec 3 Economic Principles

A thorough grounding in the fundamental principles and laws of economics is the aim of this basic course. The main topics include the nature and organization of production, the nature and importance of wants, the relation of money and prices, the process of exchange, and the nature of international trade.

2 semester hour credits

Ec 4 Economic Principles

A continuation of Ec 3. A careful analysis is made of the determination of price under conditions of competition and monopoly, and of the distribution of wealth and income in the form of wages, economic rent, interest, and profits. The elements of insurance are discussed in connection with profits.

Preparation: Ec 3

2 semester hour credits

Ec 5 Economic Problems

In this course the application of economic principles to some of the major economic problems of modern society is emphasized. The problems studied include consumption, protective tariffs, and subsidies, labor problems such as unemployment and labor unions, and the business cycle.

Preparation: Ec 3

2 semester hour credits

Ec 6 Economic Problems

A continuation of Ec 5. Among the problems considered are the following: price stabilization, the agricultural problem, the relation of government to business including control of monopolies and public utilities, insurance, public finance, and proposals for the remodeling and improving of the economic system.

Preparation: Ec 5

2 semester hour credits

Ec 7 Money and Banking

This course, amplifying the more general treatment of money and credit in Ec 3 and Ec 4, considers the problems of monetary and banking control with particular emphasis upon the policies of the Federal Reserve System. Current developments are carefully considered.

Pre-requisite: Ec 3, Ec 4

2 semester hour credits

Ec 8 Business Cycles

After a study of the conditions which underlie cyclical fluctuations in prices, volume of trade, physical production, and employment, a careful analysis is made of the more significant theories of the business cycle. The possibilities of controlling such fluctuations and of initiating recovery receive extended attention. Throughout the course emphasis is placed upon the current phase of the business cycle and its peculiar problems.

Preparation: Ec 5, Ec 6

2 semester hour credits

Ec 11 Labor Problems

An intensive study of the labor problems of modern industry constitutes the content of this course. Unemployment and other grievances of the worker, including industrial accident and disease, inadequate wages, long hours, undesirable working conditions,

child and woman labor, etc., are carefully analyzed. Labor unions, representing the workers' effort to solve the above problems, receive extended attention with an appraisal of their policies and accomplishments. Employee representation, profit-sharing plans and similar devices of the employer to meet the same problems are also examined critically. The attitude of our government toward these problems and its attempts to handle them are analyzed carefully. The suggestions of other groups and agencies in respect to these problems will be treated, e.g. co-operative movement, socialism.

Pre-requisite: Ec 3, Ec 4

2 semester hour credits

Ec 12 Economic Systems

After developing various criteria for evaluating the different economic systems, the course proceeds to a comparative analysis of capitalism, co-operation, socialism, communism, and fascism. The problems of economic planning receive particular attention.

Pre-requisite: Ec 3, Ec 4

2 semester hour credits

Ec 14 International Economic Relations

A careful examination of the important principles of international trade and finance precedes a critical survey of the international commercial policies of modern nations, with special reference to the United States. Such broader problems as the international control of raw materials, exchange restrictions, international cartels and the economic activities of the League of Nations and other international organizations are considered.

Preparation: Ec 5, Ec 6

3 semester hour credits

Ec 15 History of Economic Thought

A critical review of the origin and development of economic thought. After a brief account of the contributions of Plato and Aristotle, the early Christian fathers, and the writers of the Middle Ages, each of the main schools of economic thought is taken up in turn: the Mercantilists, the Physiocrats, the Classical School, the Socialists, the Historical School, the Austrian School, and the Neo-Classical School.

Preparation: Ec 5, Ec 6

2 semester hour credits

Ec 16 Advanced Economic Theory

The course introduces the student to the more complex aspects of economic theory. Particular consideration is given to the major modern theoretical problems.

Preparation: Ec 15

2 semester hour credits

Ec 17 Statistics

This course is intended to give the student an understanding of statistical principles and methods and their practical application in the social sciences. A study is made of the nature, sources, collection, and organization of statistical facts; the presentation of such facts in tabular or graphic form, the various averages, measures of dispersion, and the construction and use of index numbers.

2 semester hour credits

Ec 18 Statistics

The major portion of this continuation of Ec 17, concerns the analysis of time series, and includes the methods of obtaining trends, seasonal indexes, and the measurement of cyclical variation. The application of correlation analysis in the field of social science is given extended attention.

Preparation: Ec 17

2 semester hour credits

Ec 61 Seminar

Assigned readings and written reports on selected topics. May be elected with the consent of the department by qualified seniors majoring in economics.

2 semester hour credits

Ec 62 Seminar

A continuation of Ec 61.

Preparation: Ec 61

2 semester hour credits

Ec 65 Thesis

See statement on Theses, page 139.

3 semester hour credits

Ec 66 Thesis

A continuation of Ec 65.

3 semester hour credits

The following courses offered in the College of Business Administration may be counted as courses in economics:

AC 1 Accounting I

This course presents the fundamental principles of accounting theory and practice. Beginning with a consideration of the need for and the purpose served by accounting, a study of the balance sheet and operating statement is presented so that the ultimate purpose of accounting is understood before the mechanical methods of recording business transactions are presented. The course then takes up specific balance sheet accounts, the law of debit and credit, the theory of nominal accounts, construction and interpretation of accounts, the recording process, the trial balance, construction of financial statements, the need for adjustments at the end of the period, depreciation, deferred and accrued items.

3 semester hour credits (3 cl., 2 lab.)

AC 2 Accounting I

This course continues the work of the first semester with increased emphasis placed on accounting and interpretation of accounts. The main topics covered are closing of books, starting the new period, comparative statements, control accounts, and the operation of petty cash systems.

Preparation: AC 1

3 semester hour credits (3 cl., 2 lab.)

FI 4 Business Finance

The fundamental principles of finance are approached in this course from the point of view of the business man. A study is made of the two basic ways of financing, namely, equity and borrowed funds, and their use in original and expansion financing. In addition, consideration is given to working capital requirements and the distinctions between short-term and long-term financing. The latter part of the course deals with the application of the principles of finance to such problems, as surplus, dividend and reserve policies, the relation of the corporation to banks and the investing public, and the problems of both trade and economic risk.

3 semester hour credits (4 cl.)

FI 5 Corporation Finance

This course builds on the foundation of FI 3 and FI 4. The corporation, rather than business in general, is here considered. An

analysis is made of the changing concepts in the corporation, such as separation of ownership and management, and the roles played by private initiative and private property. Through use of actual examples, a study is made of financial policies affecting sales, prices, markets, and control.

Preparation: FI 4

2 semester hour credits

FI 12 Public Finance

This course is concerned with the basic principles of governmental finance. After a study of the different kinds of taxes imposed by municipal, state, and federal governing bodies, attention is given to the "trend" in taxation, and the effects of governmental borrowing and tax policies. A large part of the course is devoted to an analysis of the sources of revenue such as commodity, highway, general property, poll, income, and death taxes.

Preparation: Ec 6

2 semester hour credits

IA 3 Personnel Administration

A consideration of what modern industry is doing in making an application of science to the obtaining and retaining of an effective and co-operative working force. The student studies thoroughly personnel administration systems now in use including the preparation and use of many forms among which are the occupational description, application, and interview blanks, promotion charts, wage scale, personnel control charts, etc. In addition, such subjects as wage payment plans, profit sharing, the training of workmen, workers' security plans, employee representation, collective bargaining, and management relationships are given attention.

Provisions of the National Labor Relations Act and the Wages and Hours Act are discussed.

3 semester hour credits (4 cl.)

IA 4 Personnel Problems

This course brings to the attention of the student an understanding of the related, yet varied, problems with which the modern personnel department is confronted. These include problems of guidance, placement, job evaluation, adjustment of rates, employee rating systems, development of complete, yet simple, personnel records, etc.

3 semester hour credits (4 cl.)

MA 1 *Marketing Principles*

This course is designed to acquaint the student with the principles underlying the distribution of merchandise. The first part of the course is concerned with the basic structure of markets; the main functions of marketing such as assembling, grading, storing, buying, selling and financing of goods; and the general classification of commodities into major types for the purpose of analytical study. Attention is then turned to a detailed consideration of the activities of the several types of middlemen, the work of the commodity exchanges and co-operative marketing associations, and the development of chain stores, mail order houses, and department stores. Other topics considered are market risk, pricing, selling terms and discounts, hedging, advertising, and the legal aspects of price maintenance.

3 semester hour credits (4 cl.)

MA 2 *Marketing Problems*

Using actual case material this course analyzes and suggests solutions to a wide variety of selling problems in typical industries and trades. It is aimed throughout to develop the analytical powers of the student so that he may decide a problem from the viewpoint of a marketing executive. Consideration is given to consumers' buying habits and buying motives, to the important types of retail and wholesale enterprise, and to an analysis of the channels of distribution with the object of formulating a basis for selecting suitable channels for various products. The marketing of industrial goods is studied including certain special problems such as hedging. Producer's co-operative marketing is also given attention.

3 semester hour credits (4 cl.)

Education

NOTE: In addition to the courses listed, Ps 5 Educational Psychology, may also be counted as a course in education.

Ed 1 History of Education

Education is considered as the means by which nations have attempted to realize their social and spiritual ideals. This course traces the history of education from ancient times through the Greek and Roman periods, the Middle Ages, the Renaissance and Reformation, down to John Locke and the Enlightenment. The course is concerned with the development of points of view as well as with the details of organization and practice.

2 semester hour credits

Ed 2 History of Education

Beginning with the emotional reaction against formalism in life as exemplified by Rousseau, this course takes up the immediate background of modern education and traces the development of national systems. The influence of such men as Pestalozzi, Herbart, Froebel, Spencer, Mann, Barnard, Dewey, and others is studied in detail. The course closes with a consideration of present tendencies in education.

2 semester hour credits

Ed 3 Educational Measurements

The course concerns itself with current problems in the field of educational tests and measurements. Most of the lectures are given over to a discussion of the construction and use of new type objective tests, with particular reference to the field of secondary education. The relative merits of the essay and the objective examination are considered in connection with the problem of grades and grading systems. Enough elementary statistics is included to enable students to use intelligently the results of testing. Emphasis is placed upon the importance of an accurate interpretation of test data and upon the futility of indiscriminate testing.

2 semester hour credits

Ed 4 Educational Organization and Administration

A study of the principles underlying the organization, administration, and supervision of secondary schools in the U. S. A. The course is illustrated with suitable problems taken from actual practice. It should be of special interest to students who contemplate teaching as a vocation.

2 semester hour credits

Ed 7 Comparative Education

A discussion of the educational background and current theories and practices of England, France, and Germany. Emphasis is laid upon the bearing of European education on American practice. Much of the assigned reading is in current periodical literature, although a basic text is also used. Lectures, special reports, and class discussions comprise the media by which the course is conducted.

2 semester hour credits

Ed 9 Educational Sociology

The course considers the relationship between education and sociology. Educational objectives are set up from the findings of sociological research and the traditional curriculum is examined in the light of these objectives with a view towards its reconstruction. A critical attitude is maintained toward philosophical implications which will inevitably arise in the course.

2 semester hour credits

Ed 10 Educational Philosophy

A study of the relationship between the science of education and the philosophy of education is followed by a consideration of philosophies of education in the light of basic theses of the history of philosophy. Such topics as evolutionism, behaviorism, pragmatism, instrumentalism, and progressive education are viewed in the perspective of the history of philosophy.

2 semester hour credits

Ed 11 Principles of Secondary Education

A critical study of the aims, objectives and functions of secondary schools. Relations of the junior high school, the senior high school, and the junior college to American life are discussed.

2 semester hour credits

Ed 12 Methods of Teaching in Secondary Schools

A fundamental course in methods of teaching. Such topics as motivation, socialization, drill, specific techniques, attention and fatigue, use of books and laboratories are discussed.

3 semester hour credits (4 cl.)

English

E 1-A English I

The aim of this course is to help the student attain competence in the understanding and evaluating of modern literature and in written expression. It includes a review of the structural essentials of the English language, various written assignments, and the study of essays and informational articles.

3 semester hour credits

E 2-A English I

Continuing the general purposes of E 1-A, this course proceeds to a study of the special problems of exposition and description, and to a critical reading of poems, short stories, and plays.

3 semester hour credits

E 5 Advanced Composition

The technique of writing in the shorter literary form will be studied in detail and applied systematically toward the building up of the student's individual style. A part of the time each week will be devoted to personal conference between the student and the instructor.

Pre-requisite: E 1-A, E 2-A

2 semester hour credits

E 6 Advanced Composition

A continuation of E 5.

Preparation: E 5

2 semester hour credits

E 7 Creative Writing

For students interested in imaginative writing. Original papers by the students will be discussed in class and in weekly conference with the instructor. The principles underlying creative writing will be carefully studied.

Preparation: E 6

2 semester hour credits

E 8 Creative Writing

Continued practice in creative writing supplemented by an analysis of the work appearing in the better magazines. The shorter forms will be emphasized.

Preparation: E 7

2 semester hour credits

E 9 Journalism I

The newspaper technique, with practice in re-writing. The general tasks of an "inside" man and the functions of the editorial department.

3 semester hour credits (4 cl.)

E 10 Journalism I

The problems of reporting and newswriting, with written assignments in all types of spot news reporting.

Preparation: E 9

3 semester hour credits (4 cl.)

E 11 Journalism II

Editing the news. The writing of editorials, feature articles, and columns.

Preparation: E 10

3 semester hour credits (4 cl.)

E 12 Journalism II

A general practice course in newspaper writing, the covering of special assignments, and editorial problems.

Preparation: E 11

3 semester hour credits (4 cl.)

E 13 Effective Speaking

This course offers practical training in the preparation and presentation of the various types of speeches. The instruction is planned to eliminate defects of voice, posture, and delivery, and to develop in the student an ability to speak easily, naturally, and forcefully.

1 semester hour credit (2 cl.)

E 14 Effective Speaking

Continued practice in impromptu and extempore speaking, organization of material, consideration of the audience, and vocabulary building, form the basis of the course.

Preparation: E 13

1 semester hour credit

E 15 Survey of English Literature

A survey of English literature to 1800. After a brief study of the social and political background of each literary period, the writing of the period is considered, and the more important writers are studied and read in detail. The purpose of the course is to give the student an appreciation of English literature as a whole, and an intimate knowledge of its major figures.

3 semester hour credits (4 cl.)

E 16 Survey of English Literature

A survey of English literature from 1800 to the present century. The outstanding writers are read, studied, and related to the general background of nineteenth-century England. The purpose of the course is to give the student an understanding of the writers who contributed most to the formation and development of modern literature in England.

3 semester hour credits (4 cl.)

E 17 English Drama Before Shakespeare

A study of the origins and growth of English drama from its beginning to its culmination in the work of Shakespeare. A discussion of the morality plays will be followed by a careful consideration of the influence of Plautus, Terence, and Seneca on the dramatists of the age. Plays by Lyly, Peele, Greene, Kyd, and Marlowe will be read as a background for Shakespearean drama.

2 semester hour credits

E 18 Chaucer

An introduction to the language and literature of Chaucer and his contemporaries, with special attention to *The Canterbury Tales*. The course includes a consideration of Chaucer's influence on the growth of the language, an examination of the "roman de tiroir" form, and a survey of the chief types of European popular narrative which *The Canterbury Tales* represents.

2 semester hour credits

E 19 Shakespeare

The Elizabethan period, sixteenth century London, the Shakespearean stage and audience, and the actors' companies will be discussed. Shakespeare's life and his development as a dramatist will be carefully considered. Five plays will be intensively studied.

2 semester hour credits

E 20 Shakespeare

Lectures will be given on Shakespeare's language, the text of the plays, Shakespearean criticism, editors' problems, etc. Four plays will be intensively studied. The sonnets will be read and discussed.

2 semester hour credits

E 21 Nineteenth Century Poetry I

Background forces which shaped the Romantic period will be carefully studied; the influence of German idealists, of the French Revolution, and of the natural reaction from the classicism of Pope and Johnson will be analyzed and evaluated. Poetry of Wordsworth, Coleridge, Byron, Keats, and Shelley will be studied critically.

2 semester hour credits

E 22 Nineteenth Century Poetry II

A study of the poetry of the Victorian era with emphasis on the writings of Browning and Tennyson. The influence of the age on its poets will be carefully considered.

2 semester hour credits

E 23 Seventeenth and Eighteenth Century Prose

A study of the important, non-fiction prose works of Bacon, Browne, Swift, Addison, Steele, Johnson, and Boswell, among others, with emphasis on the relationship of the literature to the age. The various prose styles will be discussed. A written paper will be required.

2 semester hour credits

E 24 Nineteenth Century Prose

An examination of significant nineteenth century writers as to their social, political, literary, and educational ideas. Lamb, Hazlitt, Carlyle, Macaulay, Newman, Ruskin, Arnold, Huxley, and Stevenson are among those to be considered. A written paper will be required.

2 semester hour credits

E 25 American Literature to 1860

A survey of American literature from colonial times to the triumph of the transcendental movement in New England. The work of Bryant, Irving, Cooper, Poe, Emerson, Thoreau, Lowell, Holmes, Longfellow, and Melville will be emphasized.

2 semester hour credits

E 26 American Literature After 1860

Continuing E 25, the course will consider the rise of realism after the Civil War, the development of American humor, the appearance of local color writers, and modern trends since 1900.

2 semester hour credits

E 27 History of the English Novel

This survey will trace the development of the novel from the 18th century to the beginning of the Victorian era. It will deal with the maturing of the novel form in the hands of Defoe, Richardson, Fielding, and Smollett; the "Gothic Romances" of Walpole and Lewis; and the novel of manners as seen in Jane Austen.

2 semester hour credits

E 28 History of the English Novel

This course will deal with the work of the Great Victorians, particularly Thackeray, Dickens, Eliot, Conrad, and Hardy. A few contemporary novels will be discussed. The student will be expected to read widely in the field.

2 semester hour credits

E 29 Great European Writers

An introduction to the classics of Ancient and Medieval literature. The purpose of the course is to acquaint the student broadly with our literary heritage and to furnish him background for later studies in literature.

2 semester hour credits

E 30 Great European Writers

A survey of the literature of Europe from the Renaissance to the beginning of the twentieth century.

2 semester hour credits

E 31 Comparative Drama

Through the analysis of plays of various origins, this course shows the development of essential techniques in drama from period to period, and demonstrates how a general type of drama manifests special characteristics in accordance with the social and political backgrounds against which it is set. During this term the emphasis is placed on the classic literature of the Greek and Roman theater.

2 semester hour credits

E 32 Comparative Drama

This course, a continuation of the study begun in E 31, deals with the representative plays of the Continent since 1600.

2 semester hour credits

E 33 Modern Literature 1895-1915

Beginning with a study of late nineteenth-century literature in England and America, the course considers the principal literary developments of the period 1895 to 1915. New forms and methods in poetry, the novel, the short story, and the play are studied and are illustrated by the work of literary groups and movements and by such major writers as Walt Whitman and Henry James.

2 semester hour credits

E 34 Modern Literature Since 1915

A survey of contemporary literature in England and America. Outstanding writers are studied in detail. Some of the subjects discussed are recent changes in form and technique; literary experiments; the effect on literature of the World War, and of recent social changes. During the course each student writes a paper and presents a class report on a contemporary author.

2 semester hour credits

E 35 The Essay in England and America

Between fifty and sixty essays are studied in detail, the time ranging from the end of the 16th century to the present. The developing form of the essay as a type is considered throughout the course, and for each essay the author's judgments, style, and literary habits are studied, with some attention to the principal events of the author's life.

Lecture and class discussion are both employed.

2 semester hour credits

E 36 Introduction to Criticism

This course is based on a careful reading and discussion of some thirty-five pieces of critical writing, ranging from Plato to Conrad. Various critical doctrines are discussed, traced in their development from century to century, and experimentally applied to notable literary works old and new.

2 semester hour credits

E 61 Seminar

Independent investigation of a selected topic together with intermediate research reports. May be elected with the consent of the department by qualified seniors majoring in English.

2 semester hour credits

E 62 Seminar

A continuation of E 61. A final report is required which summarizes the research of the year.

Preparation: E 61

2 semester hour credits

Geology

Gy 1 General Geology

A study of earth movements and various terrestrial applications of solar energy. Lectures on fundamental general facts as to origin and movements of the earth, weathering, work of winds, underground and surface waters, glaciers and the glacial period, lakes and swamps, and vulcanism.

2 semester hour credits

Gy 2 General Geology

Course Gy 1 is continued with such topics as mountain formation, oceans, oceanic life, atmosphere touching upon meteorology. A considerable portion of time is given to the study of igneous, sedimentary and metamorphic rocks, supplemented by laboratory and field work.

2 semester hour credits

Gy 5 Historical Geology

A review of the beginning of the earth, its development and historical significance of rock characters. This is followed by a study of the pre-Cambrian Paleozoic and the early Paleozoic sub-era.

2 semester hour credits

Gy 6 Historical Geology

Continuation of the first semester taking in the late Paleozoic sub-era, and the Mesozoic and Cenozoic periods, and continuing through the geologic history of man.

2 semester hour credits

Government

Gv 1 American Government and Politics

The study of our National Government with respect to its organization and function; its powers and limitations under the Constitution; its legislative, administrative, and judicial machinery under the party system of government and bureaucracy.

3 semester hour credits

Gv 2 American Government and Politics

A more detailed study of the relationships of our federal, state, and municipal governments, including an analysis and comparison of the various state governments and types of municipal government with respect to state and local agencies for carrying out the executive, legislative, and judicial functions of government in a democratic country.

3 semester hour credits

Gv 3 Comparative Government

The older governments of Europe, those principally of Great Britain and France, but also of Switzerland and the Scandinavian countries, are described and analyzed in this course. Institutions are compared in these various states with reference to America and the newer governments of Europe.

2 semester hour credits

Gv 4 Comparative Government

A study of the newer governments of Europe, as found in Germany, Italy, and the Soviet Union. Democracy and dictatorship are analyzed as different modes of life and rule. These states are compared to each other, to the older governments of Europe, and to the United States.

2 semester hour credits

Gv 5 American Constitutional Law

After a careful study of the influences affecting the framing of the Constitution, attention is turned to the leading constitutional principles of the American government as developed through judicial interpretation.

2 semester hour credits

Gv 6 American Constitutional Law

A continuation of Gv 5. Primary emphasis is placed upon the relation of constitutional law to present day problems with particular reference to such items as "due process of law" and "inter-state commerce".

Preparation: Gv 5

2 semester hour credits

Gv 7 Origins of Political Theory

A survey of political philosophy from Plato and Aristotle to Bentham. The nature, origin, forms, and ends of the state and government are covered.

2 semester hour credits

Gv 8 Modern Political Theory

A critical study is made of the major developments in political theory since Bentham, with special reference to the influence of these developments upon American politics and political institutions. Attention is paid to the modern conflict between the democratic and the totalitarian conceptions of the state.

2 semester hour credits

The following courses offered in the College of Business Administration may be counted as courses in government.

PA 2 Public Administration I

A study of career service of the local, state, and national government; the administrative positions in career service; the information needed by the government administrator in order to function effectively; and the means for acquiring public administration knowledge.

3 semester hour credits (4 cl.)

PA 5 Business and Government

The object of this course is to develop a thorough understanding of the relationships between government and business. The attitude of our government towards business since 1885 as evidenced by legislative, judicial, and executive action will be analyzed in detail. Careful attention will be given the experience under the NRA and the attempts on the part of government and business to preserve the good features of the codes. Special consideration will be given to the part played by the administrative agency.

2 semester hour credits (4 cl.)

PA 7 Public Administration II

A study of the subject matter and principles of management necessary for the efficient operation of the government.

3 semester hour credits (4 cl.)

PA 8 Public Administration III

This course presents a study of the public relations, fiscal control, and policy making aspects of public administration, stressing the importance of co-operation among government bureaus, legislative bodies, and the public; and presents to the student an appreciation of the importance of versatility of ability for a successful public career.

3 semester hour credits (4 cl.)

History

H 1 History of Civilization

This is primarily a background course. Introductory lectures deal with primitive society, the development of language and writing, and the early contributions of Egypt and Asia. More detail is given to the structure of Greek and Roman society, the rise of the Christian Church, the barbarian invasions of the Empire, the growth of Islam, and the life of the early Middle Ages.

4 semester hour credits (4 cl.)

H 2 History of Civilization

This course deals with the growth of the monarchies in Europe, the medieval Church, the art and literature of the Renaissance and Reformation, the economic revolution, the Age of Reason in France and England, the Old Regime and the Revolution in France, and the growth of science and industrialism.

4 semester hour credits (4 cl.)

H 5 Europe, 1789-1870

This course aims at describing and interpreting the development of European states from the French Revolution to 1870. Major topics include the Metternich system, the emergence of French Republicanism, and the unification of Italy and Germany. Non-political factors receive much attention throughout the course.

2 semester hour credits

H 6 Europe Since 1870

The international relationships which precipitated the tragedy of 1914 are considered. The rise of militarism and nationalism, secret diplomacy, propaganda and the press, the "incidents" which led to the World War, the conduct of the war, the peace treaties, and the rise of socialism and fascism are discussed in this course.

2 semester hour credits

H 7 England to 1688

This course surveys the political, social, religious, and economic development of England to the Revolution of 1688. Political history receives the major emphasis, but stress is placed upon the rise of the English institutions which represented England's outstanding contribution to civilization.

2 semester hour credits

H 8 England since 1688

A continuation of H 7. A study is made of Queen Anne's England, the policies of Walpole, England's part in European politics, the age of the first Reform Bill, English imperialism, and Victorian society.

2 semester hour credits

H 9 The United States to 1865

This course is an interpretation of the events which shaped the American nation to the Civil War. Social customs, economic influences, racial contributions, and humanitarian movements are not neglected, though the political history is stressed.

2 semester hour credits

H 10 The United States Since 1865

Major attention is given to the social, economic, and political foundations of recent history in this survey of the transition of America from an agricultural to an urban industrialized society since the Civil War. Consideration is given to the problems arising with the emergence of America as a world power.

2 semester hour credits

H 11 Latin American History

This course deals with the European background of Spanish and Portuguese colonization in the New World, the exploits of the conquistadores, the Indian civilizations, colonial institutions, and the forces which gave rise to the revolutions in the early 19th century.

2 semester hour credits

H 12 Latin American History

This course continues H 11, and describes the Wars of Independence and the rise of the republics. A study is made of the international relations of the Latin American countries, the Monroe Doctrine, and the Pan-American conferences.

2 semester hour credits

H 13 English Constitutional History

This course is devoted to a consideration of the English constitution and of the common law; local government vs. central government; the origin and growth of Parliament; the development of the British cabinet system; and a comprehensive study of statutes and documents.

3 semester hour credits (4 cl.)

H 14 American Constitutional History

In this course a study is made of the historical development of the United States Constitution with particular emphasis on its progressive adaptation to a changing social and economic order.

3 semester hour credits (4 cl.)

H 15 Far Eastern International Relations, 1840-1900

Between 1840 and 1900 the United States and the European powers developed their several foreign policies towards China and Japan. Japan succeeded in developing a policy toward China and the West. The Chinese Empire failed to develop a consistent policy and was nearly dismembered. This course concerns the above developments.

2 semester hour credits

H 16 Far Eastern International Relations Since 1900

Since 1900 Japan emerged as a world power and embarked upon a career of imperialism. China at last developed a foreign policy. With the close of the first World War, European imperialism waned. The United States tried to act as Umpire. War resulted. This course concerns these developments.

2 semester hour credits

Mathematics

M 31 Mathematics I

A course in freshman algebra for non-science majors who intend to enter the armed services. All the topics usually included in freshman algebra are covered.

Students who intend to prepare for M 5 — Differential Calculus must take M 1 — Algebra in place of this course.

3 semester hour credits

M 32 Mathematics II

A freshman trigonometry course which includes the simple elements of analytic geometry and graphs for non-science majors. This course, together with M 31, will enable the non-science student to prepare himself in mathematics for greater value in the armed services.

Preparation: M 31

3 semester hour credits

M 1-A Mathematics A

An algebra course similar in content to M 31 — Mathematics I for upperclass non-science majors.

3 semester hour credits (4 cl.)

M 2-A Mathematics B

A trigonometry course similar in content to M 32, Mathematics II for upperclass non-science majors.

Preparation: M 1-A

3 semester hour credits (4 cl.)

M 1 College Algebra

The study of algebra is scheduled to begin with the solution of the quadratic equation, simultaneous quadratics, and equations in quadratic form. However, a rapid but thorough review of the fundamentals of algebra precedes this. The solution of the quadratic is followed by a detailed study of the theory of exponents. Then follow radicals, series, variation, inequalities, and the elementary principles of the theory of equations. Considerable time is given to plotting and the use of graphs in the solution of equations. The elementary theory of complex numbers is also covered.

3 semester hour credits

M 3 *Trigonometry*

This is a complete course in trigonometry and should enable the student to use all branches of elementary trigonometry in the solution of triangles as well as in the more advanced courses where the knowledge of trigonometry is essential. Some of the topics covered are the trigonometric ratios; inverse functions; goniometry; logarithms; circular measure; laws of sines, cosines, tangents, half angles; solution of oblique and right triangles; transformation and solution of trigonometric and logarithmic equations. Considerable practice in calculation of practical problems enables the student to apply his trigonometry to problems arising in practice at an early stage. Additional work, graphical and algebraic, is done with the complex number, introducing De-Moivre's theorem and the exponential form of the complex number.

2 semester hour credits (2 cl.)

M 4 *Analytic Geometry and Introduction to Calculus*

This being a basic course in preparation for any further study of mathematics, it requires a thorough knowledge of the fundamentals of algebra. The course covers cartesian and polar coordinates; graphs; the equations of simpler curves derived from their geometric properties; thorough study of straight lines, circles, and conic sections; intersections of curves; transformation of axes; plotting and solution of algebraic equations of higher order and of exponential, trigonometric, and logarithmic equations; loci problems. The general equation of the second degree is thoroughly analyzed in the study of conic sections. Some time is devoted to curve fitting from empirical data.

Explicit and implicit functions, dependent and independent variables, some theory of limits, continuity and discontinuity are given special attention from both the algebraic and the geometric points of view. Some theorems on the infinitesimal are introduced, and a study is made of infinity and zero as limits. Relative rates of change, both average and instantaneous, and the meaning of the slope of a curve follow. The differential and the derivative as applied to algebraic functions with the geometric interpretation are then studied. Tangents to curves of the second degree follow here. Simple applications with interesting practical problems help to develop the interest here and lay a solid foundation for the study of the calculus. The introduction of the differential at the same time with the derivative helps considerably to bridge the large gap which usually exists when the student passes from the study of the elementary analytic geometry to the infinitesimal of calculus.

Preparation: M 1, M 3

5 semester hour credits (5 cl.)

M 5 *Differential Calculus*

The differential is introduced at the outset of the course, together with the derivative; geometric and practical illustrations are given of both; and both are carried along throughout the course. The work consists of differentiation of algebraic, trigonometric exponential, and logarithmic functions, both explicit and implicit; slopes of curves; maxima and minima with applied problems; partial differentiation; parametric equations; derivatives of higher order; curvature; evolutes and involutes; points of inflection; related rates; velocities, acceleration; indeterminate forms; expansion of functions; series. Although the subject matter deals with considerable theory, constant sight is kept of the practical application of the theory. The geometric interpretation of every new subject is carefully defined, and problems are continually solved dealing in practical applications of the theory in geometry, physics, and mechanics.

Pre-requisite: M 1

Preparation: M 4

3 semester hour credits (4 cl.)

M 6 *Integral Calculus*

This course, a continuation of M 5, deals with integration as the inverse of differentiation as well as the limit of summation. The topics covered are methods of integration; use of integral tables; definite integrals; double and triple integrals; areas in rectangular and polar co-ordinates; center of gravity; moment of inertia; length of curves; volumes of solids; areas of surfaces of revolution; volumes by triple integration; practical problems in work, pressure, etc., depending on the differential and integral calculus for solution; solution of simpler differential equations.

Preparation: M 5

3 semester hour credits (4 cl.)

M 7 *Differential Equations I*

The elementary theory of differential equations and the method of solution of certain ordinary differential equations are offered here as a general course in mathematics. Although this is principally a problem course in solving differential equations, properties of the equations and of their solutions are deduced, and applications in the various fields of scientific work are analyzed.

Preparation: M 6

2½ semester hour credits (4 cl.)

M 8 *Differential Equations II*

Special cases of first order equations are considered, and a fuller treatment of first order equations of higher degree leads to a consideration of envelopes, special loci, and particular curves. The general second order linear equation is studied, and the several

well-known methods of attack are presented. Solution in series form of equations whose primitives are not made up of classified functions is studied. Elementary partial differential equations of the first and second orders, leading to a presentation of Fourier's Series, conclude the course.

Preparation: M 7

3 semester hour credits (4 cl.)

M 9 *Higher Algebra*

Complex numbers and the elementary theory of vectors start this course. It continues with the solution of equations of the third and fourth degree, Horner and Sturm theorems, the solution of higher degree equations with the use of graphs. Some invariant forms are studied. Then follow general systems of equations with the complete study of determinants, and some of the elements of matrices. A study is made of the theory of elimination, linear dependence, and linear transformations. If time permits, a study is made of probability and related subjects.

Pre-requisite: M 1, M 3

3 semester hour credits (4 cl.)

M 10 *Curve Analysis*

This course deals with the methods of approximation of roots; plotting; empirical equations; and alignment charts.

Pre-requisite: M 5

3 semester hour credits (4 cl.)

M 11 *Solid Analytic Geometry*

The study of analytic geometry is extended here into three dimensions, mostly with rectangular co-ordinates, although cylindrical and spherical co-ordinates and the transformation between the three systems are also introduced. The equations of the first and second degree are analyzed. A study is made of line segments and angles; planes, linear equations in three variables; normal forms; systems of planes and angles; surfaces in general; quadric surfaces. Some work is done on general curves, certain special curves, surfaces of revolution, locus problems, and homogeneous co-ordinates.

Pre-requisite: M 4

3 semester hour credits (4 cl.)

M 12 *Modern Geometry*

This course offers a brief outline of the history of geometry through the ages, especially the 19th century; analysis of geometry of the triangle and circle; systems of co-ordinates, linear dependence, transformations; principle of duality; poles and polars; harmonic division, cross ratios, and conical projection. Certain special theorems include those of Desargues, Pascal, and Brianchon.

Pre-requisite: M 4

3 semester hour credits (4 cl.)

M 13 *Spherical Trigonometry*

This is a complete course in the study of spherical trigonometry, solving right and isosceles spherical triangles; Napier's rules; laws of sines, cosines, half-angles, and half-side formulas; Napier's analogies. A detailed solution of oblique spherical triangles including areas follows. Considerable time is spent on the celestial sphere and the astronomical triangle and on navigation, calculation of latitude and longitude, bearing, and time.

Pre-requisite: M 3

3 semester hour credits (4 cl.)

M 14 *History of Mathematics*

In this course a survey is made of the development of various branches of mathematics, and attention is given to the lives of men who have made outstanding contributions to mathematical science.

2 semester hour credits

M 15 *Advanced Calculus*

No student should elect this course unless he is thoroughly familiar with the contents of courses M 5 and M 6. The subjects covered are continuity, indeterminate forms, applications of partial differentiation, vectors and differentiation of vectors, the complex variable, differentiation and functions of the complex variable, differentiation of integrals, envelopes.

Pre-requisite: M 6

3 semester hour credits (4 cl.)

M 16 *Advanced Calculus*

This is a continuation of M 15. The course starts with work in differential equations and problems in damped vibration and the potential function. Other topics are the hyperbolic function; expansion in infinite series including Fourier series; integration of special forms with definite, multiple, and improper integrals; probability integral; Gamma function; Beta function; Bessel's function; line integrals and applications.

Preparation: M 15

3 semester hour credits (4 cl.)

M 17 *Series*

Various types of series and their uses. Study of limits, infinite series, tests for various types of convergence; divergence; algebraic operations with series; integration and differentiation; applications and use of special series.

Pre-requisite: M 5, M 6

3 semester hour credits (4 cl.)

M 18 *Theory of Equations*

This course is devoted more to the theory and analysis of equations and roots than to actual solutions. The properties of polynomials and continuity are studied. The complex number, algebraic and geometric form, is reviewed. The solutions of quadratic, cubic, and quartic equations are discussed and analyzed with various theorems on roots. Proof is given of the fundamental theorems; other theorems discussed are the remainder theorem, Horner's and Newton's methods, limits of roots, Rolle's theorem, Descarte's rule, Sturm's theorem, Budan's theorem, and De-Moivre's theorem. Transformations are studied and an analysis is made of rational, irrational, complex, and multiple roots. Symmetric functions including the relation of roots and coefficients are also taken up. Some work is done with discriminants. The course closes with the theory of least squares and curve fitting.

Preparation: M 5, M 6

3 semester hour credits (4 cl.)

Modern Languages

French

F 1 *Elementary French*

A beginner's course stressing the essentials of grammar, practice in pronunciation, and progressive acquisition of basic vocabulary and current idiomatic expressions.

3 semester hour credits (upperclass, 5 cl.)

F 2 *Elementary French*

A continuation of F 1. Most of the time is devoted to the reading of simple texts with oral practice based on the material read.

Preparation: F 1

3 semester hour credits (upperclass, 5 cl.)

F 3 *Intermediate French*

In this course several texts of average difficulty are read and studied. The work includes a thorough review of grammar, oral practice based on the reading matter, memorizing of selected passages, dictation, study of idioms, vocabulary building, and outside reading.

Preparation: F 2

3 semester hour credits (upperclass, 4 cl.)

F 4 *Intermediate French*

A continuation of F 3, with an increasing amount of both class and outside reading.

Preparation: F 3

3 semester hour credits (upperclass, 4 cl.)

F 5 *Modern French Literature*

A study of the chief trends in French literature since 1850. Significant works of representatives of the various literary movements are read and analysed. The course is concerned mainly with the short-story and the novel. Collateral reading and reports.

Preparation: F 4

3 semester hour credits (4 cl.)

F 6 *Modern French Literature*

A continuation of F 5. The major part of the course is devoted to the study of the drama, with the remainder given to French verse of the period. Collateral reading and reports.

Preparation: F 4

3 semester hour credits (4 cl.)

F 7 *French Classicism*

This course is designed to furnish a comprehensive survey of the background and development of French literature of the 17th century and to aid the student in a critical interpretation of the most significant works of the period. The reading is mainly from the dramatic works of Corneille, Racine, and Moliere. Collateral reading and reports.

Preparation: F 4

3 semester hour credits (4 cl.)

F 8 *French Classicism*

A continuation of F 7. The works of La Fontaine, Descartes, and Pascal receive the major attention.

Preparation: F 4

3 semester hour credits (4 cl.)

F 9 *French Romanticism*

A study of the origins and development of the Romantic movement in French literature. The readings include significant selections from the novels of the principal writers of the Romantic school, as well as some of the more important Romantic dramas.

Preparation: F 4

3 semester hour credits (4 cl.)

F 10 *French Romanticism*

Continuing F 9, the course pursues further the study of the Romantic drama. The latter part of the term is devoted to the reading of selections of poetry from the works of Lamartine, Hugo, Musset, and others.

Preparation: F 4

3 semester hour credits (4 cl.)

German

G 1 Elementary German

A beginner's course stressing the essentials of grammar, practice in pronunciation, and progressive acquisition of basic vocabulary and current idiomatic expressions.

3 semester hour credits (upperclass, 5 cl.)

G 2 Elementary German

A continuation of G 1. Most of the time is devoted to the reading of simple texts, with oral practice based on the material read.

Preparation: G 1

3 semester hour credits (upperclass, 5 cl.)

G 3 Intermediate German

In this course several texts of average difficulty are read and studied. The work includes a thorough review of grammar, oral practice based on the reading matter, memorizing of selected passages, dictation, study of idioms, vocabulary building, and outside reading.

Preparation: G 2

3 semester hour credits (4 cl.)

G 4 Intermediate German

A continuation of G 3, with an increasing amount of both class and outside reading.

Preparation: G 3

3 semester hour credits (4 cl.)

G 5 Modern German Literature

A survey of the main currents of German literature since 1880. Representative works of the leading authors of the period are read and interpreted. The course deals chiefly with the short-story and the novel. Collateral reading and reports.

Preparation: G 4

3 semester hour credits (4 cl.)

G 6 Modern German Literature

A continuation of G 5. The drama and poetry receive the main emphasis. Collateral reading and reports.

Preparation: G 4

3 semester hour credits (4 cl.)

G 7 *The Classical Period of German Literature*

This course aims to trace the development of German literature during the second half of the 18th century, beginning with the Storm and Stress period. The works of Lessing, Goethe, and Schiller will receive the major emphasis.

Preparation: G 4

3 semester hour credits

G 8 *The Classical Period of German Literature*

A continuation of G 7. The readings will consist mainly of the later works of Goethe and Schiller.

Preparation: G 4

3 semester hour credits

G 9 *German Literature of the Nineteenth Century*

This course will consider the chief tendencies in German literature from the beginning of Romanticism to the coming of Naturalism. Representative works of the principal writers of the period will be read and analyzed.

Preparation: G 4

3 semester hour credits

G 10 *German Literature of the Nineteenth Century*

A continuation of G 9. Among the works to be read will be some of the outstanding dramas of the latter half of the century.

Preparation: G 4

3 semester hour credits

Spanish

Sp 1 Elementary Spanish

A beginner's course stressing the essentials of grammar, practice in pronunciation, and progressive acquisition of basic vocabulary and current idiomatic expressions.

3 semester hour credits (upperclass, 5 cl.)

Sp 2 Elementary Spanish

A continuation of Sp 1. Most of the time is devoted to the reading of simple texts with oral practice based on the material read.

Preparation: Sp 1

3 semester hour credits (upperclass, 5 cl.)

Sp 3 Intermediate Spanish

In this course several texts of average difficulty are read and studied. The work includes a thorough review of grammar, oral practice based on the reading matter, memorizing of selected passages, dictation, study of idioms, vocabulary building, and outside reading.

Preparation: Sp 2

3 semester hour credits (4 cl.)

Sp 4 Intermediate Spanish

A continuation of Sp 3, with an increasing amount of both class and outside reading.

Preparation: Sp 3

3 semester hour credits (4 cl.)

Sp 5 Spanish Literature of the Golden Age

This course deals with the Spanish prose of the sixteenth and seventeenth centuries, particularly the *Don Quixote* and the *Novelas Ejemplares*. Lectures, translation, and collateral reading.

Preparation: Sp 4

3 semester hour credits (4 cl.)

Sp 6 Spanish Literature of the Golden Age

A continuation of Sp 5, with emphasis on the drama of Lope de Vega, Tirso de Molina, and Calderón. Lectures, translation, and collateral reading.

Preparation: Sp 4

3 semester hour credits (4 cl.)

Sp 7 Modern Spanish Literature

This course aims to acquaint the student with the literature of Spain during the last quarter of the eighteenth century and the first half of the nineteenth. The chief emphasis is placed on the romantic poetry and drama. Lectures, translation, and collateral reading.

Preparation: Sp 4

3 semester hour credits (4 cl.)

Sp 8 Modern Spanish Literature

A continuation of Sp 7, this course is devoted to Spanish literature of the second half of the nineteenth century, with emphasis on the realistic novel. Lectures, translation, and collateral reading.

Preparation: Sp 4

3 semester hour credits (4 cl.)

Sp 9 Modern Spanish-American Literature

The purpose of this course is to acquaint the student with the general trends of Spanish American literature. Plays, essays, and novels that reflect the economic and social problems of our neighbors to the south will receive the chief attention. Lectures, translation, and collateral reading.

Preparation: Sp 4

3 semester hour credits (4 cl.)

Sp 10 Modern Spanish-American Literature

A continuation of Sp 9, this course is devoted to the literature of Mexico and Central America, and particularly the works of Rubén Darío.

Preparation: Sp 4

3 semester hour credits (4 cl.)

Orientation

This course, required of all first year students, is designed to make the entering student explicitly aware of those facts, principles, and techniques which are significantly related to the maintenance of his intellectual efficiency, to assist him in making desirable social adjustments in the college community, to help him make a wise choice in his upperclass field of specialization. Special effort is made to prepare the student to make an early and satisfactory adjustment to the conditions of the co-operative work. Lectures and individual conferences.

No credit

Philosophy

Ph 1 Introduction to Philosophy

This introductory course combines the historical and systematic approaches to the subject. The historical treatment includes a survey of the chief philosophers and the development of basic philosophical ideas. The systematic treatment presents the several types of philosophy, such as realism, materialism, idealism, and pluralism. The place of philosophy is considered in its relation to ethics, religion, and natural sciences. The course both acquaints the student with facts about philosophy and trains him to think philosophically.

2 semester hour credits

Ph 2 Problems of Philosophy

The chief systems of thought are applied to what may be termed the persistent problems of philosophy. The problems are to be found in the fields of epistemology, teleology, and metaphysics. The following topics suggest representative problems which will be studied: the relation between mind and body, the nature and extent of freedom of the will, the validity of knowledge, and the bearing which the more recent views in physics and psychology have upon related philosophical problems.

Preparation: Ph 1

2 semester hour credits

Ph 3 History of Philosophy

Beginning with the early Greek age period, the course traces the development of philosophical thought through the patristic and scholastic periods. A study is made of the transition from medieval to modern philosophy.

2 semester hour credits

Ph 4 History of Philosophy

The first half of the course is a study of the period from Bacon to Kant; the second half begins with the time of Kant and ends with a consideration of present-day philosophers and their systems of thought.

2 semester hour credits

Ph 5 Philosophy of Religion

Fundamental questions of religious belief are examined in the light of philosophy. Modern religions are compared with respect to their views on the nature of the Deity, the meaning of life, and the relationship between man and God. Further topics for study include the question of the validity of mysticism and intuitive knowledge of religious truth, the immortality of the soul, the meaning of the supernatural, the presence of natural evil, and the relation of morality to religion.

Students may take Philosophy of Religion without having had any other course in this department, although there is an advantage in having had the Introduction to Philosophy.

2 semester hour credits

Ph 6 Logic

Formal logic is subordinated in this course to the more practical consideration of the methods of critical and reflective thought. Common fallacies in logic are indicated, and the student is given frequent exercises in correct reasoning. Attention is given to the principles of induction, deduction, verification, syllogism, and assumption. To assist the student to think clearly and correctly is the essential purpose of this modified course in logic.

2 semester hour credits

Physical Education

Physical Training

All first year students are required to take Physical Training. Health, strength, and vitality do not come by chance but by constant attention to those factors involved in their development. It is very essential for the student to acquire good habits of living.

The work in the course includes a formal calisthenic program, special exercise classes for the correction of postural defects, participation in the regular athletic program, including baseball, basketball, football, hockey, track, and many types of informal games. All members of the class are also required to learn to swim.

Students wishing to be excused from Physical Training because of physical defects are required to present a petition to the faculty supported by a physician's certificate.

No credit

PE 1 Hygiene

One class hour a week is devoted to the study of information closely related to the Physical Training work and to personal and mental hygiene. For this class lecture, each student is assigned at least one hour of outside study based on the required textbook. The course includes enough of the fundamentals of physiology and anatomy to enable the student to understand such parts of the course as require some knowledge of these subjects.

1 semester hour credit

PE 5 Principles of Physical Education

The course considers the place of physical education in the educational program in the United States. The development of physical education programs based on the changes in society from primitive to modern times is discussed, careful attention being given to the needs of the individual, as well as to the needs of the group. Relationship between medical service and the physical education department is considered, and methods of co-ordination between these two important departments are investigated. The history of physical education, in so far as it affects the modern program, is included in the course. Factors such as economic, social and political influences, which have an important effect on the conduct of the program, are also considered. School health programs are discussed, with particular emphasis upon the medical and physical examinations and tests and the procedures which follow. Diagnostic and remedial techniques, classroom hygiene, and principles of preventive and corrective exercise are discussed. The course also includes a consideration of the proper place occupied by interschool and intercollegiate athletics in the physical education program.

Required of all students electing Physical Education as a minor field.

2 semester hour credits

PE 6 Play and Recreation

The purpose of this course is to prepare students for leadership of leisure time activities. It considers the biological and sociological aspects of play and its increasing importance in modern life. From a practical point of view the course deals with the problems faced by the director of leisure time activities in the community, in the school, or on the playground. The course should be of special interest to students who contemplate entering social work or teaching.

2 semester hour credits

PE 7 History of Physical Education

To provide a valuable background for students in this field, this course traces the whole history of physical education from the days of the Greeks and the Romans up to the present. Attention is given to a number of special systems of training which have been developed in Europe.

The course is required of all students electing Physical Education as a minor field.

2 semester hour credits

PE 8 Administration of Physical Education

This course is designed to acquaint the student in the field of physical education with many of the administrative problems which are likely to arise in connection with his work. The subject matter includes a consideration of the objectives of the physical education program, personnel required, and various allied subjects such as gymnasias, athletic fields, and the construction and maintenance of these units. The conduct of the athletic program including requirements for equipment, arrangements of schedules, coaching, meets, etc., is also included.

Required of all students electing Physical Education as a minor field.

2 semester hour credits

PE 9 Football

This course is designed to furnish the student interested in football coaching with a thorough knowledge of the sport. Careful consideration is given to the fundamentals in discussing the plays of each position in the line and backfield. Various well-known offensive and defensive systems are discussed for the purpose of considering their general merits, as well as adaptations to particular situations. Training and conditioning, rules and interpretation, and officiating are given proper attention.

2 semester hour credits

PE 11 Track and Field Events

The course considers the care and training of track athletes. Practice schedules, selection of material, conduct of meets, etc., are discussed. The viewpoint from which the topics are treated is that of the student of coaching technique. In connection with this course, action pictures taken from actual performances by world champions, together with moving pictures, are of great value in demonstrating the style and technique of track and field events.

2 semester hour credits

PE 12 Basketball and Baseball

Various systems in use throughout the country are compared and contrasted. Team play, offense, defense, signal systems, training and conditioning, rules, and officiating are among the topics studied. The student in this course should acquire a thorough knowledge of all phases of the sports.

2 semester hour credits

Physics

P 31 Introduction to Physics

A complete course in mechanics, heat, and sound, following the subject matter found in a standard textbook of College Physics. Motion pictures and many demonstrations are shown during the lectures. Numerical problems furnish excellent practice in the use of algebra. Not open to science majors.

Must be taken concurrently: M 31

4 semester hour credits

P 32 Introduction to Physics

A continuation of P 31 dealing mainly with the study of light and electricity. Selected numerical problems give good practice in the use of trigonometry. P 31 together with P 32 have been carefully planned to fulfill the Physics requirements of the Navy V-1 program. Not open to science majors.

Must be taken concurrently: M 32

4 semester hour credits

P 1 Physics I

A course in the study of the fundamental principles of the mechanics of physics. Some of the topics covered are simple harmonic motion, uniformly accelerated motion, friction, work, energy, power, fluid pressure, angular velocity, centripetal force, equilibrium under the action of a series of parallel forces, and equilibrium under the action of concurrent forces.

3 semester hour credits

P 2 Physics I

This is a thorough course in magnetism and electricity, covering all the details within the scope of standard college texts on these subjects. All lectures are illustrated by means of lantern slides, motion pictures, and special apparatus.

3 semester hour credits

P 3 Physics II

A course in the study of wave motion, sound, and light. Molecular mechanics and other fundamental principles of physics are stressed at the beginning.

Preparation: P 1, P 2

2 semester hour credits

P 3-A General Physics

A study of the fundamental principles of mechanics, heat, wave-motion and sound. The course includes lectures with appropriate demonstrations, and selected experiments performed by the student in the laboratory.

4 semester hour credits (4 cl., 4 lab.)

P 4 Physics II

The topics studied are thermometry, expansion of solids, liquids and gases, calorimetry, change of state including latent heat of fusion and vaporization (sublimation), triple point diagram, conduction and radiation, and the mechanical equivalent of heat.

Preparation: P 1, P 2

2 semester hour credits

P 4-A General Physics

This course is a continuation of P 3-A, and deals with the fundamental principles of light, electricity and magnetism. Appropriate demonstrations and laboratory experiments accompany all lectures.

4 semester hour credits (4 cl., 4 lab.)

P 5 Physics Laboratory

This course consists of experiments in mechanics, light, electricity, and magnetism performed by each student, supplementing the lecture and classroom work of courses P 1, P 2, and P 3. The experiments on mechanics include the use of the vernier, micrometers, and spherometer; the calculation of true weights; the funicular polygon; gyroscopic motion; simple harmonic motion; and the determination of areas by means of the planimeter. Other experiments in this course include plotting the magnetic field about a bar magnet and the determination of the pole strength and field strength of the magnet, the position of images in a combination of lenses, and one experiment on electrostatics.

Preparation: P 1, P 2

1 semester hour credit (2 lab.)

P 6 Physics Laboratory

A continuation of the experiments started in P 5, including experiments on sound and heat. Some of the experiments of this course concern the modulus of elasticity, the determination of the velocity of sound, the coefficient of cubical expansion of mercury, the air thermometer, the determination of the mechanical equivalent of heat, the study of the maximum and minimum thermometers, and the use of the spectroscope in the study of the bright line and solar spectra. The experiments of this course supplement the class work of courses P 1, P 2, P 3, and P 4.

Preparation: P 1, P 2

1 semester hour credit (2 lab.)

P 9 Optics

This is a course in the more advanced forms of geometrical optics and the study of physical optics.

Preparation: P 3, M 6

3 semester hour credits (3 cl., 2 lab.)

P 10 Optics

Continuing P 9, a detailed study is made of physical optics with considerable time spent on modern spectroscopic theory.

Preparation: P 9

3 semester hour credits (3 cl., 2 lab.)

P 13 Acoustics

A complete mathematical study of the modes of vibration of strings, pipes, membranes, and a consideration of vibrating systems in general.

Preparation: P 3, M 6

3 semester hour credits (3 cl., 2 lab.)

P 14 Acoustics

A course in the application of the principles of P 13 to the problems of speech, audition, sound, filters, musical instruments, and the acoustics of auditoriums.

Preparation: P 13

3 semester hour credits (3 cl., 2 lab.)

P 15 Modern Physics

Consideration is given to molecular relations, and then to atomic structure, quantum mechanics, and allied subjects.

Preparation: P 4, M 7

3 semester hour credits (3 cl., 2 lab.)

P 16 Modern Physics

Radioactivity, artificial transmutation, nuclear structure, and the devices for studying these phenomena are here presented. Some time is also given to the Stark, Zeeman, and Raman effects, and to X radiation and cosmic rays.

Preparation: P 15

3 semester hour credits (3 cl., 2 lab.)

P 65 Thesis

See statement on Theses, page 139.

3 semester hour credits

P 66 Thesis

A continuation of P 65.

3 semester hour credits

P 101 Theoretical Physics

Vector analysis, dynamics, hydrodynamics, thermodynamics, statistical mechanics.

(For graduate students only.)

3 semester hour credits

P 102 Theoretical Physics

Kinetic theory of gases, electrical theory, magnetic theory, optics, spectra.

(For graduate students only.)

3 semester hour credits

P 103 Quantum Mechanics

Quantum phenomena, Schrödinger equation, potential barriers, classical atomic dynamics, linear harmonic oscillator, rigid rotator.

(For graduate students only.)

3 semester hour credits

P 104 Quantum Mechanics

The hydrogen atom, Van der Waal's forces, perturbation theory, the helium atom, the hydrogen molecule, valence bonds, radiation.

(For graduate students only.)

3 semester hour credits

P 105 Applied Mathematics

Elliptical integrals, matrices, algebraic and trigonometric series, line and surface integrals, some differential equations of physics.

(For graduate students only.)

3 semester hour credits

P 106 *Applied Mathematics*

Applications of vectors to physics, probability, empirical formulas, curve fitting, conformal transformations of fields and charts.

(For graduate students only.)

3 semester hour credits

P 107 *Graduate Thesis*

Thesis work for graduate students.

2-4 semester hour credits

P 108 *Graduate Thesis*

Thesis work for graduate students.

2-4 semester hour credits

P 109 *Graduate Thesis*

Thesis work for graduate students.

2-4 semester hour credits

P 110 *Graduate Thesis*

Thesis work for graduate students.

2-4 semester hour credits

The following courses offered in the College of Engineering may be counted as courses in physics:

ME 20 *Applied Mechanics (Statics)*

The subjects treated are collinear, parallel, concurrent, and non-concurrent force systems in a plane and in space; the determination of the resultant of such systems by both algebraic and graphical means, special emphasis being placed on the funicular polygon method for coplanar force systems; the forces required to produce equilibrium in such systems; first moments; and problems involving static friction, such as the inclined plane and the wedge.

Pre-requisite: P 1

3 semester hour credits (4 cl.)

ME 21 *Applied Mechanics (Kinetics)*

The subjects treated are continuation of first moments as applied to varying intensity of force and to the determination of centers of gravity of areas and solids; second moments and the application to the determination of moment of inertia of plane and solid figures, radius of gyration, polar moment of inertia, product of inertia, principal axes; uniform motion, uniformly accelerated motion, variable accelerated motion, harmonic motion; simple pendulum, rotation, work, energy, momentum, and impact.

Preparation: ME 20

3 semester hour credits (4 cl.)

ME 30 Thermodynamics

In this introductory course in the fundamentals of thermodynamics the following subjects are discussed: general theory of heat and matter; first and second laws of thermodynamics; equations of state; fundamental equations of thermodynamics; laws of perfect gases; properties of vapors including development and use of tables and charts; thermodynamic processes of gases, and saturated and superheated vapors; and the general equations for the flow of fluids.

Preparation: P 4

3 semester hour credits (4 cl.)

EL 20 Electronic Laboratory I

This course gives practical application of the material discussed in EL 21 and EL 22. The experiments are performed on power suppliers, audio amplifiers, cathode ray tube circuits, and intermediate-frequency transformers. Both sine wave and square wave testing of circuits is performed.

1½ semester hour credits (1 cl., 3 lab.)

EL 21 Electronics

The first part of this course is concerned with the motion of charged particles in electric and magnetic fields with application to such devices as cathode rays, mass spectrograph, cyclotron, secondary emission multiplier, and the magnetron. Study is then made of non-self maintaining discharges, glow and arc discharges, thermionic emission, photo-electric emission, and the characteristics of thermionic cathodes.

Pre-requisite: M 7

1 semester hour credit (2 cl.)

EL 22 Electronics

Continuing from EL 21, this course takes up the principles of operation and applications of diode, triode, and multi-electrode vacuum tubes. Among the topics considered are paths of operation, dynamic characteristics, equivalent circuits, class A, B, and C amplifiers, analysis and design of audio amplifiers, oscillators, and measuring equipment.

Preparation: EL 21

2½ semester hour credits (4 cl.)

Psychology

Ps 1 Introduction to Differential Psychology

An elementary survey of the psychology of individual differences including personality differences together with a presentation of some of the practical applications of the findings of differential psychology.

2 semester hour credits

Ps 2 General Psychology

An introduction to general experimental psychology. The topics include learning, memory, thought, imagination, motivation, emotion, sensation, and perception.

Preparation: Ps 1

2 semester hour credits

Ps 3 Experimental Psychology

Introductory laboratory. Experiments on sensory and motor phenomena, perception, learning, memory, and thought. Provides practice in the organization, statistical treatment, and interpretation of experimental data. Lectures and demonstrations in addition to laboratory work.

Pre-requisite: Ps 2

3 semester hour credits (2 cl., 4 lab.)

Ps 4 Differential Psychology

Introductory laboratory. Requires the solution of miniature problems involving the procedures used in computing scale values for rank orders, constructing rating scales, questionnaires, and mental tests.

Preparation: Ps 3

3 semester hour credits (2 cl., 4 lab.)

**Ps 5 Educational Psychology*

Considers the applications of psychological facts and principles to educational problems and practices.

Pre-requisite: Ps 2

3 semester hour credits (4 cl.)

Ps 7 Social Psychology of Everyday Life

A course devoted to the psychological examination of some of the phenomena observable in everyday social life. This includes an analysis of the socialization process, the development and role of language in everyday life, and those problems which are particularly important in war time—propaganda, rumor, and morale.

2 semester hour credits

Ps 8 Social Psychology, Theory, and Methods

A survey of the field of social psychological theory and an examination of the experimental techniques utilized in this field of psychology. Special topics are the study of leadership and cooperation, and the measurement of attitudes.

2 semester hour credits

*May be counted for credit in either Psychology or Education.

Ps 9 Psychology of Personality

Presents a survey of historical and contemporary theories of the nature of personality. The problems of the generality of traits, the consistency of expression, and the relation of cultural factors to personality, growth, and integration will be discussed

Pre-requisite: Ps 2

3 semester hour credits (4 cl.)

Ps 10 Abnormal Psychology

An introduction to the field of psychopathology. The psychology of the neuroses and the minor disturbances of everyday life are emphasized. Interpretation of clinical findings in the light of some contemporary schools of psychology is included.

Preparation: Ps 9

3 semester hour credits (4 cl.)

Ps 13 Psychological Testing

The application of psychological test methods in educational and clinical settings. May be elected with the consent of the department by qualified seniors majoring in psychology.

Pre-requisite: Ps 4

2 semester hour credits

Ps 14 Advanced Experimental Laboratory

Individual research. May be elected with the consent of the department by qualified seniors majoring in psychology.

Pre-requisite: Ps 3

2 semester hour credits (8 lab.)

Ps 61 Seminar

Assigned readings and reports in theoretical and historical problems. May be elected with the consent of the department by qualified seniors majoring in psychology.

2 semester hour credits

Ps 62 Seminar

A continuation of Ps 61.

Preparation: Ps 61

2 semester hour credits

Sociology

S 1 Introduction to Sociology

In presenting a survey of the origins and sources of human society, this study provides orientation for the courses in principles and problems which follow. The several theories of organic evolution are discussed. The antiquity of man and basic anthropological data are considered. The racial and ethnic groupings of man are then studied in the light of biological, geographical, and cultural factors.

2 semester hour credits

S 2 *Principles of Sociology*

Facts and principles basic to a general knowledge of the field of sociology are presented. The origins, forms, and forces of human associations are discussed. Consideration is given the several leading schools of sociological thought. The course is designed to meet the needs of the student who desires only an elementary survey of the subject as well as the student who plans to take advanced courses in social science.

2 semester hour credits

S 3 *Social Problems*

Attention is given the nature, complex causation, and inter-relatedness of social problems in general. Cultural change with its attendant lags, as well as other social forces and conflicts, are studied. While sociological theory is occasionally introduced to clarify the problem at hand, the course is essentially practical in character. Such problems as poverty and unemployment, race antagonisms, population pressures, and the broken home are considered. Optional field trips to various institutions give concreteness to the problems studied.

Preparation: S 1, S 2

• 2 semester hour credits

S 4 *Social Pathology*

Similar to the course in Social Problems in background and approach, this study deals with the maladjustments and ills of human society. Emphasis is given those pathological conditions which exist in relations between the individual and the group. Typical subjects presented include mental defectiveness and disease, alcoholism and drug addiction, suicide, delinquency and crime, and pathologies of domestic relations. The field trips arranged for this course add to the practical knowledge of the social ills which are studied.

Preparation: S 1, S 2

2 semester hour credits

S 5 *Criminology*

Delinquency and crime are defined and classified, and their causal factors indicated. The various theories as to what makes criminals are dealt with, and a brief history of crime is sketched. Legal and economic aspects of crime are summarized, but the study is mainly sociological. Prevention and correction of criminal behavior are stressed. Local institutions are visited.

Preparation: S 1, S 2

2 semester hour credits

S 6 *Penology*

Closely related to S 5, this subject begins with an historical treatment of the punishment of criminals. Time is devoted chiefly to an understanding of modern methods and problems of dealing with offenders. Field trips are taken to criminal courts and penal institutions.

Preparation: S 5

2 semester hour credits

S 7 *Principles of Social Ethics*

To clarify the meaning of morality in social relations is the aim of this study. Right and wrong conduct is analyzed in the light of the highest values for human society. Moral laws are discussed, and the various systems of ethics are evaluated. Scientific attitudes are encouraged in order that one's moral judgments may be compatible with one's best reflective thought.

Preparation: S 1, S 2

2 semester hour credits

S 8 *Problems in Social Ethics*

Problems arising from differences in moral standards found in the various social groups will be examined. The question of ethical relativism and determinism will be considered. A selected number of specific problems in social ethics will be discussed.

Preparation: S 7

2 semester hour credits

S 9 *The Family*

The historical development of the family is first traced, after which the course focuses upon the modern family. The monogamic family is contrasted with other types, and such unconventional forms as companionate and trial marriages are evaluated. Then follows an intensive study of family problems.

Preparation: S 1, S 2

2 semester hour credits

S 10 *The Family*

A continuation of S 9. A constructive program is presented for strengthening the family as a basic unit in society.

Preparation: S 9

2 semester hour credits

S 11 *Social Control*

The methods by which social forces are controlled provide the fundamental material of the course. External and internal types of control of the social organism are discussed. The use of violence, the power of public opinion, and the application of certain principles of social psychology are examined.

Preparation: S 3, S 4, Ph 2

2 semester hour credits

S 12 *Social Progress*

The historical development of the theory of progress, contemporary concepts of social progress, the agents of progress, and the phenomenon of regression are several of the subjects for study.

Preparation: S 11

2 semester hour credits

S 13 *Population Problems*

Population pressure, contrasts between urban and rural population, migration, and pertinent types of social mobility are studied in this course. After a brief survey of population problems in several areas of Europe and the Orient, attention is then given to a careful analysis of population conditions in the United States. The many factors are shown which intensify the problem in our country in spite of its wide area. What principles have superseded those of Malthus? What immigration policies are most sound for our country in the long run? What methods can be adopted which will relieve the population pressure in our great cities? Such questions as these will be discussed.

Preparation: S 1, S 2

2 semester hour credits

S 14 *Urban Sociology*

Upon studying the complex human society found in the various cities of the world, this course then turns to an analysis of the modern American city. Its types, social values, and pathological elements are discussed. Methods of city planning are considered. The belief on the part of some sociologists that democracy is doomed by its cities is examined in the light of typical problems of urban society.

Preparation: S 1, S 2

2 semester hour credits

S 15 *History of Sociological Thought*

With emphasis upon modern authorities, this course surveys the chief systems of sociological thought and the personalities who have made outstanding contributions to the field. Such leading thinkers as Sumner, Ward, Gumpлович, Durkheim, and Pareto are studied. The relation of sociological theory to contemporary world movements is stressed.

Preparation: S 3, S 4, Ph 2

2 semester hour credits

S 16 *Sociology of Religion*

Religious beliefs, practices, and institutions are examined and evaluated in relation to their effects upon society at large. The great religions of the world are compared in the light of their

contributions to the well-being and progress of mankind. The social creeds of the several leading denominations in America are discussed with respect to their attitudes towards race, industry, war, and other social problems. The influences of organized religion upon politics and educational institutions are given attention.

Preparation: S 3, S 4

2 semester hour credits

S 61 Seminar

Assigned readings and reports on selected topics. May be elected with the consent of the department by qualified seniors majoring in sociology.

2 semester hour credits

S 62 Seminar

A continuation of S 61.

Preparation: S 61

2 semester hour credits

S 65 Thesis

See statement on Theses below.

3 semester hour credits

S 66 Thesis

A continuation of S 65.

3 semester hour credits

Theses

A thesis in the College of Liberal Arts is considered to be an essay involving the statement, analysis, and solution of some problem in a special field. Its purpose is to demonstrate a satisfactory degree of initiative and power of original thought and work on the part of the candidate. A mere resume of existing knowledge in some subject is not acceptable. This, it is true, must usually be made, but in addition thereto the student must show his ability to deal constructively with the data he has collected and his power to draw significant and reliable conclusions from his investigations. The completed thesis will be examined for acceptance or rejection from the technical viewpoint by the major departments interested and then forwarded to the Secretary of the Faculty. Final approval of the thesis rests with the Dean. When it is accepted, the thesis becomes the property of the college and is not to be printed, published, nor in any other way made public except in such manner as the major department and the Dean shall jointly approve.

Frequently thesis subjects may be chosen on problems arising where the student is employed at co-operative work. Employers are usually glad to consult with the student in the selection of the subject and the subsequent development of the thesis.

When theses are conducted in this manner, it is understood that the employer is not expected by the University to assume any expense of the thesis nor to furnish any supplies or equipment to be used in the development of the thesis other than those which he may consider it advisable and desirable to place at the disposal of the students. The regulations governing the use of laboratories and buildings of the co-operating firms will vary in practically all cases and each student must naturally be governed definitely by the regulations existing at the plant where the thesis is to be conducted.

It is understood that the thesis work must not in any way interfere with the regular required co-operative work and must be done during hours distinctly outside of regular co-operative work hours unless special request is made by the co-operating firm for some other arrangement.

Theses conducted in conjunction with co-operating firms must be submitted in duplicate, one copy to be presented by the Dean to the co-operating employer.

Theses are not required of seniors in the College of Liberal Arts. To certain students who wish to do so, however, the privilege of writing a thesis may be granted by the Faculty Committee on Theses in accordance with the following regulations:

1. To be eligible to write a thesis a student must have attained a scholastic average of at least 2.0 or better through his middler year and the first half of his junior year.

2. Students who have met this minimum requirement may petition for the privilege of substituting a thesis for formal classroom work.

3. In his petition the student must state the subject which he proposes to investigate and give a brief statement of the purpose and scope of the proposed thesis.

4. Petitions for the privilege of writing theses must be submitted in writing to the head of the student's major department not later than the middle of the second term of the junior year.

NORTHEASTERN UNIVERSITY

Courses of Instruction Offered in the Day Colleges

Certain of the courses here listed are offered only in alternate years, and the University reserves the right to withdraw any course in which there is insufficient enrollment.

Courses not included in the prescribed curricula may be taken only after approval by the student's faculty adviser. Except where otherwise indicated, electives are not open to freshmen.

Pre-requisite courses are divided into two groups. Those courses printed in type (AC2) must have been completed with passing grades before a student will be permitted to register for the advanced courses to which they apply. Those courses printed in (B3) are of such a preparatory nature that a student undertaking an advanced course without having had the preparatory courses specified, will ordinarily find himself greatly handicapped, and he may not register in the advanced course without the consent of the instructor.

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College*	Curriculum	Yr.
<i>Accounting</i>								
AC1	Accounting I		4	4	0	BA	All	1
AC2	Accounting II		4	4	0	BA	All	1
AC5	Cost Accounting	AC2	4	4	2	BA	All	2
AC6	Cost Accounting	AC2	4	4	2	BA	All	2
AC7	Accounting Problems	AC4	3	4	0	BA	All	3
AC8	Accounting Problems	AC4	3	4	0	BA	All	3
AC9	C. P. A. Problems	AC4	3	5	0	BA	Elective	
AC10	Income Tax and Public Accounting	AC4	3	5	0	BA	Elective	
<i>Biology</i>								
B1	General Zoology		3	2	2	LA	Biology	1
B2	General Botany		3	2	2	LA	Biology	1
B3	Invertebrate Zoology	B1	2	2	4	LA	Biology	2, 3
B4	Invertebrate Zoology	B3	2	2	4	LA	Biology	2, 3
B5	Vertebrate Zoology	B1	2	2	4	LA	Biology	3
B6	Vertebrate Zoology	B5	2	2	4	LA	Biology	3
B7	Animal Physiology	B6	2	3	0	LA	Biology	
B8	Animal Physiology	B7	2	3	0	LA	Biology	
B9	Principles of Genetics	B1,2	2	3	0	LA	Biology	
B10	Principles of Genetics	B9	2	3	0	LA	Biology	
B11	Animal Histology	B6	2	2	2	LA	Biology	
B12	Animal Histology	B11	2	2	2	LA	Biology	
B13	Vertebrate Embryology	B6	2	2	2	LA	Biology	
B14	Vertebrate Embryology	B13	2	2	2	LA	Biology	
B15	General Parasitology	B3,4	2	2	2	LA	Biology	
B16	General Parasitology	B15	2	2	2	LA	Biology	
B17	Mammalian Anatomy	B6	2	1	6	LA	Biology	
B18	Mammalian Anatomy	B17	2	1	6	LA	Biology	
B19	Histological Technique	B12	2	1	6	LA	Biology	
B20	Histological Technique	B19	2	1	6	LA	Biology	

*NOTE: BA = College of Business Administration.

LA = College of Liberal Arts.

Eng = College of Engineering.

No.	Course	Pre-requisite	Sem. Class Lab. Hrs. Hrs. Hrs.			College	Curriculum	Yr.
Biology — Continued								
B21	History of Biology		2	3	0	LA	Biology	
B22	History of Biology		2	3	0	LA	Biology	
B25	General Entomology	B1	3	3	4	LA	Biology	
B26	Economic Entomology	B1,B25	3	3	4	LA	Biology	
B61	Seminar		2	3	0	LA	Biology	
B62	Seminar	B61	2	3	0	LA	Biology	
B65	Thesis		3			LA	Biology	
B66	Thesis		3			LA	Biology	

Co-ordination

C1	Vocational Conference		1½	2	0	LA	All	5
C2	Vocational Conference		1½	2	0	LA	All	5
C7	Engineering Conference		1½	2	0	Eng	All	5
C8	Engineering Conference		1½	2	0	Eng	All	5
C11	Business Conference		1½	2	0	BA	All	5
C12	Business Conference		1½	2	0	BA	All	5

Chemistry

Ch1	General Chemistry		4	3	3	Eng, LA	{ All, Eng LA Pure & Applied Science	1 1 1
Ch2	General Chemistry	Ch1	4	3	3	Eng, LA	{ All, Eng LA Pure & Applied Science	1 1 1
Ch9	Qualitative Analysis	Ch1,2	3	4	0	Eng, LA	{ IV(E), LA Chem	2
Ch11	Qualitative Anal. Lab.	Ch1,2,9	2½	0	10	Eng, LA	{ IV(E), LA Chem	2
Ch12	Quantitative Analysis	Ch1,2,9,14	2	3	0	Eng, LA	{ IV(E), LA Chem	2
Ch13	Quantitative Analysis	Ch1,2,12,15 or 17	2	3	0	Eng, LA	{ IV(E), LA Chem	3
Ch14	Quantitative Anal. Lab.	Ch1,2,11,12	1½	0	7	Eng, LA	{ IV(E), LA Chem	2
Ch15	Quantitative Anal. Lab.	Ch14,13	2	0	9	LA	{ Chem	3
Ch17	Quantitative Anal. Lab.	Ch1,2,13,14	1	0	5	Eng	{ IV	3
Ch25	Organic Chemistry	Ch1,2,27	3	4	0	LA	{ Chem	
Ch26	Organic Chemistry	Ch1,2,25,28	3	4	0	LA	{ Chem	
Ch27	Organic Chemistry Lab.	Ch1,2,25	1	0	5	LA	{ Chem	
Ch28	Organic Chemistry Lab.	Ch1,2,26,27	1	0	5	LA	{ Chem	
Ch31	Organic Chemistry	Ch1,2,33,40	2	3	0	Eng, LA	{ IV(E), LA Chem	4
Ch32	Organic Chemistry	Ch31,34	2	3	0	Eng, LA	{ IV(E), LA Chem	4
Ch33	Organic Chemistry Lab.	Ch1,2,31,40	1	0	5	Eng, LA	{ IV(E), LA Chem	4
Ch34	Organic Chemistry Lab.	Ch32,33	1	0	5	Eng, LA	{ IV(E), LA Chem	4
Ch35	Organic Chemistry	Ch32,37 or 39	2	3	0	Eng, LA	{ IV(E), LA Chem	5
Ch37	Organic Chemistry Lab.	Ch34,35	2	0	9	LA	{ Chem	5
Ch39	Organic Chemistry Lab.	Ch34,35	1	0	5	Eng	{ IV	5
Ch40	Physical Chemistry	{ Ch12,14,13, 15 or 17	2½	3	2	Eng, LA	{ IV(E), LA Chem	3

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
Chemistry — Continued								
Ch41	Physical Chemistry	Ch13,15,40	3½	4	4	LA	Chem	4
Ch42	Physical Chemistry	Ch41	3½	4	4	LA	Chem	4
Ch45	Physical Chemistry	Ch13,17,40	3	4	2	Eng	IV	4
Ch46	Physical Chemistry	Ch45	3	4	2	Eng	IV	4
Ch48	Colloidal Chemistry	Ch41	2½	3	2	LA	Chem	
Ch51	Sources of Information	Ch1,2	1	1	0	Eng, LA	{IV(E) LA Chem	2 2
Ch52	History of Chemistry	Ch1,2	2	3	0	LA	Elective	
Ch63	Advanced Chemistry	Ch42	2	3	0	LA	Chem	
Ch64	Advanced Chemistry	Ch35	3	3	4	LA	Chem	
Ch65	Thesis	Ch42	3	0	9	LA	Chem	
Ch66	Thesis	Ch42	4	0	12	LA	Chem	
Ch101	Adv. Physical Chemistry		3			LA	Graduate	
Ch102	Adv. Physical Chemistry		3			LA	Graduate	
Ch103	Adv. Organic Chemistry		3			LA	Graduate	
Ch104	Adv. Organic Chemistry		3			LA	Graduate	
Ch105	Graduate Thesis		2-4			LA	Graduate	
Ch106	Graduate Thesis		2-4			LA	Graduate	
Ch107	Graduate Thesis		2-4			LA	Graduate	
Ch108	Graduate Thesis		2-4			LA	Graduate	

Chemical Engineering

ChE1	Flow of Fluids	P1	2	3	0	Eng	IV	3
ChE2	Industrial Stoichiometry	Ch12,13	2	3	0	Eng	IV	3
ChE3	Unit Operations	ChE1,5	3	4	0	Eng	IV	4
ChE4	Unit Operations	ChE2,3,6	3	4	0	Eng	IV	4
ChE5	Unit Operations Lab.	ChE3	1½	0	4	Eng	IV	4
ChE6	Unit Operations Lab.	ChE4	1½	0	4	Eng	IV	4
ChE7	Inorganic Chem. Tech.	Ch9,ChE2	2	3	0	Eng	IV	5
ChE8	Organic Chem. Tech.	Ch32,ChE4	2	3	0	Eng	IV	5
ChE9	Chem. Process Lab.	ChE4	3	1	6	Eng	IV	5
ChE10	Chem. Eng. Projects	ChE4	4	1	6	Eng	IV	5
ChE11	Chem. Eng. Thermodynamics	Ch46	2	3	0	Eng	IV	5
ChE12	Engineering Materials		2	3	0	Eng	IV	5

Civil Engineering

CI3	Surveying I	M3	1½	3	0	Eng	I	2
CI4	Surveying II	CI3	2½	4	0	Eng	I	2
CI5	Surveying I, F & P	D1,CI3	1	0	5	Eng	I	2
CI6	Surveying II, F & P	CI4,5	1	0	5	Eng	I	2
CI7	Surveying III	CI3,4	2	3	0	Eng	I	3
CI8	Surveying IV	CI7	2	3	0	Eng	I	3
CI9	Surveying III, F & P	CI5,6,7	1	0	5	Eng	I	3
CI10	Surveying IV, F & P	CI8,9	1	0	5	Eng	I	3
CI11	Hydraulics	ME20,21	2½	4	0	Eng	I,II,III,V	3
CI12	Hydraulics	CI11	2	3	0	Eng	I,II,V	3
CI15	Theory of Structures	ME22,23	3	4	0	Eng	I	4
CI16	Theory of Structures	CI15	3	4	0	Eng	I	4
CI18	Concrete Testing Lab.	ME69	1½	1	3	Eng	I	4
CI21	Sanitary Engineering	CI11,12	2	3	0	Eng	I	4
CI22	Sanitary Engineering	CI21	2	3	0	Eng	I	4
CI23	Engineering Structures	CI15,16,ME23	3	4	0	Eng	I	5
CI24	Engineering Structures	CI23	3	4	0	Eng	I	5
CI25	Concrete	ME23,CI18	2	4	0	Eng	I	5

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Civil Engineering — Continued</i>								
CI26	Concrete	CI25	2	4	0	Eng	I	5
CI29	Design of Structures	CI23,25	3	2	9	Eng	I	5
CI30	Design of Structures	CI24,26,29	3	2	9	Eng	I	5
CI31	Highway Engineering	CI7,9	2	3	0	Eng	I	5
CI32	Highway Engineering	CI31	2	3	0	Eng	I	5

Drawing and Graphic Arts

D1	Engineering Drawing		3	6	0	Eng, LA	{ E, All LA, Applied Science	.1
D2	Descriptive Geometry	D1	3	6	0	Eng, LA	{ E, All LA, Applied Science	1
D3	Machine Drawing	D1	2	6	0	Eng	III	2
D4	Machine Drawing	D1	2	6	0	Eng	II, V	2

English

E1	English I		3	3	0	Eng, LA	{ E, All LA, Applied Science	1
E2	English I	E1	3	3	0	Eng, LA	{ E, All LA, Applied Science	1
E1-A	English I		3	3	0	LA	All	1
E2-A	English I		3	3	0	LA	All	1
E1-B	Fundamentals Bus. English		3	3	0	BA	All	1
E2-B	Fundamentals Bus. English		3	3	0	BA	All	1
E3-B	Business Communication		2	3	0	BA	All	2
E4-B	Business Communication		2	3	0	BA	All	2
E5-B	Advanced Report Writing		2	3	0	BA	Elective	
E5	Advanced Composition	E2-A, 1-A	2	3	0	LA	English	3
E6	Advanced Composition	E5	2	3	0	LA	English	3
E7	Creative Writing	E6	2	3	0	LA	Elective	
E8	Creative Writing	E7	2	3	0	LA	Elective	
E9	Journalism I		3	4	0	LA, BA	Elective	
E10	Journalism I	E9	3	4	0	LA, BA	Elective	
E11	Journalism II	E10	3	4	0	LA, BA	Elective	
E12	Journalism II	E11	3	4	0	LA, BA	Elective	
E13	Effective Speaking		1	2	0	BA	Elective	
E14	Effective Speaking	E13	1	2	0	BA	Elective	
E15	Survey of English Lit.		3	4	0	LA	{ Eng. & S.S. Math & Phys. Biology	2 2
E16	Survey of English Lit.		3	4	0	LA	{ Eng. & S.S. Math & Phys. Biology	2 2
E17	English Drama before Shakespeare		2	3	0	LA	English	
E18	Chaucer		2	3	0	LA	English	
E19	Shakespeare		2	3	0	LA	English	3
E20	Shakespeare		2	3	0	LA	English	3
E21	19th Cent. Poetry I		2	3	0	LA	Elective	
E22	19th Cent. Poetry II		2	3	0	LA	Elective	
E23	17th & 18th Cent. Prose		2	3	0	LA	Elective	
E24	19th Cent. Prose		2	3	0	LA	Elective	
E25	American Lit. to 1860		2	3	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>English — Continued</i>								
E26	American Lit. after 1860		2	3	0	LA	Elective	
E27	History of English Novel		2	3	0	LA	Elective	
E28	History of English Novel		2	3	0	LA	Elective	
E29	Great European Writers		2	3	0	LA	Elective	
E30	Great European Writers		2	3	0	LA	Elective	
E31	Comparative Drama		2	3	0	LA	Elective	
E32	Comparative Drama		2	3	0	LA	Elective	
E33	Modern Lit. 1895-1915		2	3	0	LA	Elective	
E34	Modern Lit. Since 1915		2	3	0	LA	Elective	
E35	The Essay in England and America		2	3	0	LA	Elective	
E36	Introduction to Criticism		2	3	0	LA	Elective	
E61	Seminar		2	3	0	LA	Elective	
E62	Seminar		2	3	0	LA	Elective	

Economics

Ec1	Economic Geography		3	3	0	BA	All	1
Ec2	Com. & Ind. Hist. of U. S.		4	4	0	BA	All	1
Ec3	Economic Principles		2	3	0	{BA LA	All Engl&S.S.	2
Ec4	Economic Principles	Ec3	2	3	0	Same as Ec3		
Ec5	Economic Problems	Ec3	2	3	0	{BA LA	All Econ,Soc	3
Ec6	Economic Problems	Ec5	2	3	0	Same as Ec5		
Ec7	Money and Banking	Ec3,4	2	3	0	LA	Elective	
Ec8	Business Cycles	Ec5,6	2	3	0	LA,BA	Elective	
Ec9	Statistics in Business		2	2	2	BA	Elective	
Ec10	Statistics in Business		2	2	2	BA	Elective	
Ec11	Labor Problems	Ec3,4	3	4	0	LA,BA	Elective	
Ec12	Economic Systems	Ec3,4	2	3	0	LA,BA	Elective	
Ec14	Inter. Ec. Relations	Ec5,6	3	4	0	LA,BA	Elective	
Ec15	Hist. of Econ. Thought	Ec5,6	2	3	0	LA,BA	Elective	
Ec16	Adv. Econ. Theory	Ec15	2	3	0	LA,BA	Elective	
Ec17	Statistics		2	3	0	LA	Elective	
Ec18	Statistics	Ec17	2	3	0	LA	Elective	
Ec21	Economics		2	3	0	Eng,LA	{All(E) LA,Chem	3
Ec22	Economics	Ec21	2	3	0	Eng,LA	{All(E) LA,Chem	3
Ec61	Seminar		2	3	0	LA	Elective	
Ec62	Seminar	Ec61	2	3	0	LA	Elective	
Ec65	Thesis		3			LA	Elective	
Ec66	Thesis		3			LA	Elective	

Education

Ed1	History of Education		2	3	0	LA	Elective	
Ed2	History of Education		2	3	0	LA	Elective	
Ed3	Educ. Measurements		2	3	0	LA	Elective	
Ed4	Educ. Org. and Adm.		2	3	0	LA	Elective	
Ed7	Comparative Education		2	3	0	LA	Elective	
Ed9	Educ. Sociology		2	3	0	LA	Elective	
Ed10	Educ. Philosophy		2	3	0	LA	Elective	
Ed11	Principles of Secondary Education		2	3	0	LA	Elective	
Ed12	Methods of Teaching in Secondary Schools		3	4	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Electrical Engineering</i>								
EL1	Electrical Eng. I	P2	1	3	0	Eng	III	2
EL2	Electrical Eng. I	EL1	1	3	0	Eng	III	2
EL5	Electrical Machinery	P2	4	4	4	Eng	I,II,V	2
EL5A	Electrical Machinery	P2,M6	4	4	4	Eng	IV	5
EL6	Electrical Measurements	EL5	2½	3	3	Eng	II,V	3
EL9	Electrical Eng. II	P2	1½	3	0	Eng	III	3
EL10	Electrical Eng. II	M7	2	3	0	Eng	III	3
EL11	Electrical Eng. Lab.	EL2	1	0	3	Eng	III	3
EL12	Electrical Eng. Lab.	EL10	1	0	3	Eng	III	3
EL13	Elec. Measurements I	EL9	2½	4	0	Eng	III	3
EL14	Elec. Measurements II	EL10,13	2	3	0	Eng	III	3
EL17	Electrical Eng. III	EL10,M6	2	3	0	Eng	III	4
EL18	Electrical Eng. III	EL17	2	3	0	Eng	III	4
EL19	Electrical Testing Lab.	EL17	2	2	3	Eng	III	4
EL20	Electronics Lab. I		1½	1	3	Eng	III	4
EL21	Electronics	M7,P2	1	2	0	Eng	III	4
EL22	Electronics	EL21	2½	4	0	Eng	III	4
EL23	Elec. Measurements Lab.	EL13,14	2	0	3	Eng	III	4
EL24	Adv. Measurements Lab.	EL13,14	2	0	3	Eng	III	4
EL25	Electrical Eng. IV	EL18	2½	4	0	Eng	III	5
EL26	Electrical Eng. IV	EL25	2½	4	0	Eng	III	5
EL27	Adv. Elec. Eng. Lab.	EL25	2	2	3	Eng	III	5
EL28	Adv. Electronics Lab.	EL20,22,30, 32,36,37	2	1	3	Eng	III	5
EL29	Electrical Eng. V-A	EL21,22	2	3	0	Eng	III	5
EL30	Electrical Eng. V-A	EL29,32	2	3	0	Eng	III	5
EL31	Electrical Eng. V-B	M7	2	3	0	Eng	III	5
EL32	Electrical Eng. V-B	EL31	2	3	0	Eng	III	5
EL35	Ultra High Frequency Technique	EL29,31	2	4	0	Eng	III	5
EL36	Ultra High Frequency Technique	EL32,35	2	4	0	Eng	III	5
EL37	Electronics Lab. II	EL20,21,22, 29,31,35	1½	1	3	Eng	III	5
EL38	Ultra High Freq. Tech. Lab.	EL20,22,29, 30,32,36,37	1½	1	3	Eng	III	5
<i>French</i>								
F1	Elementary French		3	5	0	LA	Elective	
F2	Elementary French	F1	3	5	0	LA	Elective	
F3	Intermediate French	F2	3	3	0	LA	Elective	1
F3	Intermediate French	F1	3	4	0	LA	Elective	
F4	Intermediate French	F3	3	3	0	LA	Elective	1
F4	Intermediate French	F3	3	4	0	LA	Elective	
F5	Modern French Literature	F4	3	4	0	LA	Elective	
F6	Modern French Literature	F5	3	4	0	LA	Elective	
F7	French Classicism	F4	3	4	0	LA	Elective	
F8	French Classicism	F4	3	4	0	LA	Elective	
F9	French Romanticism	F4	3	4	0	LA	Elective	
F10	French Romanticism	F9,F4	3	4	0	LA	Elective	
<i>Banking and Finance</i>								
F13	Business Finance		2	3	0	BA	All	3
F14	Finance Problems		2	3	0	BA	All	3
F16	Banking and Business	Ec3	2	3	0	BA	Elective	
F18	Adv. Banking Problems		3	4	0	BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Banking and Finance — Continued</i>								
FI9	Investments		3	4	0	BA	Elective	
FI10	Investments		3	4	0	BA	Elective	
FI12	Public Finance		2	3	0	BA	Elective	
FI13	Real Estate Practice and Appraising		3	4	0	BA	Elective	
FI14	Insurance Principles and Practice		3	4	0	BA	Elective	

German

G1	Elementary German		3	5	0	LA	Elective	
G1	Elementary German		3	3	0	LA	Elective	1
G2	Elementary German		3	5	0	LA	Elective	
G2	Elementary German	G1	3	3	0	LA	Elective	1
G3	Intermediate German	G2	3	4	0	LA	Elective	
G4	Intermediate German	G3	3	4	0	LA	Elective	
G5	Modern German Lit.	G4	3	4	0	LA	Elective	
G6	Modern German Lit.	G4	3	4	0	LA	Elective	
G7	Class. Per. of Ger. Lit.	G4	3	4	0	LA	Elective	
G8	Class. Per. of Ger. Lit.	G4	3	4	0	LA	Elective	
G9	Ger. Lit. of 19th Cent.	G4	3	4	0	LA	Elective	
G10	Ger. Lit. of 19th Cent.	G4	3	4	0	LA	Elective	

Government

Gv1	Am. Govt. and Politics		3	3	0	{BA LA	All Elective S.S. Elective	1 1
Gv2	Am. Govt. and Politics		3	3	0	{BA LA	All Elective S.S. Elective	1 1
Gv3	Comparative Govt.		2	3	0	{BA LA	Elective	
Gv4	Comparative Govt.		2	3	0	{BA LA	Elective	
Gv5	Am. Const. Law		2	3	0	LA	Elective	
Gv5-B	Constitutional Law		3	4	0	BA	Elective	
Gv6	Am. Const. Law	Gv5	2	3	0	LA	Elective	
Gv7	Origins of Political Theory		2	3	0	{BA LA	Elective	
Gv8	Modern Political Theory		2	3	0	{BA LA	Elective	

Geology

Gy1	General Geology		2	3	0	Eng	I	4
Gy2	General Geology	Gy1	2	3	0	Eng	I	4
Gy5	Historical Geology	Gy2	2	3	0	LA	Elective	
Gy6	Historical Geology	Gy5	2	3	0	LA	Elective	

History

H1	History of Civilization		4	4	0	{BA LA	Elective Soc.Sci.Elect.	1 1
H2	History of Civilization		4	4	0	Same as H1		
H5	Europe 1789-1870		2	3	0	LA	Elective	
H6	Europe since 1870		2	3	0	LA	Elective	
H7	England to 1688		2	3	0	LA	English	3
H8	England since 1688		2	3	0	LA	English	3
H9	United States to 1865		2	3	0	LA,BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>History — Continued</i>								
H10	United States since 1865		2	3	0	LA,BA	Elective	
H11	Latin American History		2	3	0	LA	Elective	
H12	Latin American History		2	3	0	LA	Elective	
H13	English Const. History		3	4	0	LA	Elective	
H14	American Const. History		3	4	0	LA	Elective	
H15	Far East Int. Rel. 1840-1900		2	3	0	LA	Elective	
H16	Far East Int. Rel. since 1900		2	3	0	LA	Elective	

Industrial Administration

IA1	Industrial Management I		2	3	0	BA	All	2
IA2	Industrial Management II		2	3	0	BA	All	2
IA3	Personnel Administration		3	4	0	BA	Elective	
IA4	Personnel Problems		3	4	0	BA	Elective	
IA6	Motion and Time Study		3	4	0	BA	Elective	
IA14	Production Processes I		3	4	0	BA	Elective	

Industrial Engineering

IN3	Production Processes I		2½	4	0	Eng	II,III,V	2
IN4	Production Processes II		1½	2	0	Eng	II,III,V	2
IN5	Industrial Mgt. I		2	3	0	{ Eng Eng	II,V I	4 5
IN6	Industrial Mgt. II	IN5	2	3	0	Same as IN5		
IN7	Industrial Accounting		2½	1	4	Eng	V	4
IN8	Industrial Accounting	IN7	4	1	4	Eng	V	4
IN9	Cost Accounting	IN8	2½	2	2	Eng	V-Elective	5
IN10	Cost Accounting	IN9	2½	2	2	Eng	V-Elective	5
IN11	Methods Engineering	IN6	2½	2	2	Eng	V-Elective	5
IN14	Ind. Finance		2½	3	0	Eng	V	5
IN15	Sales Engineering		2½	3	0	Eng	V	5
IN17	Personnel Administration		3	4	0	Eng	II,V	5
IN22	Contracts		2	3	0	Eng	II,V	5
IN23	Industrial Statistics		2	2	2	Eng	V	4
IN24	Industrial Statistics		2	2	2	Eng	V	4
IN27	Industrial Management		2	3	0	Eng	IV	5
IN28	Motion and Time Study		3	2	3	Eng	V	3
IN30	Tech. Exec. Cont.		3	4	0	Eng	V	5

Business Law

L1	Legal Bases of Business		2	3	0	BA	All	2
L2	Legal Bases of Business		2	3	0	BA	All	2

Mathematics

M1	College Algebra		3	3	0	{ Eng LA	All App & Pure Sci	1 1
M1-A	Mathematics A		3	4	0	BA,LA	Elective	4,5
M2-A	Mathematics B		3	4	0	BA,LA	Elective	4,5
M3	Trigonometry		2	2	0	{ Eng LA	All App & Pure Sci	1 1
M4	Analytic Geometry and Intro. to Calculus	M1,3	5	5	0	Same as M1		

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
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Mathematics — Continued

M5	Differential Calculus	M1,4	3	4	0	{ Eng LA	All Math&Phys, Chem	2 2
M6	Integral Calculus	M5	3	4	0	Same as M5		
M7	Differential Equations I	M6	2½	4	0	Eng	III,IV	3
M8	Differential Equations II	M6,7	3	4	0	LA	Math&Phys	
M9	Higher Algebra	M1,3,4	3	4	0	LA	Elective	
M10	Curve Analysis	M5	3	4	0	LA	Elective	
M11	Solid Anal. Geometry	M4	3	4	0	LA	Elective	
M12	Modern Geometry	M4	3	4	0	LA	Elective	
M13	Spherical Trigonometry	M3	3	4	0	LA	Elective	
M14	Hist. of Mathematics		2	3	0	LA	Elective	
M15	Advanced Calculus	M6	3	4	0	LA	Math&Phys	3
M16	Advanced Calculus	M15	3	4	0	LA	Math&Phys	3
M17	Series	M5,6	3	4	0	LA	Elective	
M18	Theory of Equations	M5,6	3	4	0	LA	Elective	
M31	Mathematics I		3	3	0	{ LA BA	S.S.Elective Elective	1 1
M32	Mathematics II		3	3	0	Same as M31		

Marketing and Advertising

MA1	Marketing Principles		3	4	0	BA	All	3
MA2	Marketing Problems		3	4	0	BA	All	3
MA3	Sales Management		3	4	0	BA	Elective	
MA4	Sales Management		3	4	0	BA	Elective	
MA5	Advertising Principles		3	4	0	BA	Elective	
MA6	Advertising Problems		3	4	0	BA	Elective	
MA7	Retail Store Mgt.		3	4	0	BA	Elective	
MA8	Retail Merchandising		3	4	0	BA	Elective	

Mechanical Engineering

ME1	Mechanism		3	6	0	Eng	II & V	3
ME15	Industrial Plants	ME23,32	2½	6	0	Eng	II—Elective	5
ME16	Industrial Plants	ME15	2½	6	0	Eng	V,II—Elective	5
ME20	Applied Mech. (Statics)	P1	3	4	0	Eng	All	2
ME21	Applied Mech. (Kinetics)	ME20	3	4	0	Eng	All	3
ME22	Strength of Materials	ME20,21,P4	3	4	0	Eng	All	3
ME23	Strength of Materials	ME22	2	3	0	Eng	I,II,V	4
ME24	Advanced Mechanics	ME23	2	3	0	Eng	I,II	4
ME25	Strength of Materials		1½	2	0	Eng	III	4
ME27	Metallography	IN3	2	3	0	Eng	II & V	3, 4
ME29	Heat Eng. (Power Pl't Eq.)		2	3	0	Eng	II	3
ME30	Heat Eng. (Thermo.)	P4	3	4	0	Eng	II,IV	3
ME31	Heat Engineering	ME30,29	2½	4	0	Eng	II	4
ME32	Heat Engineering	ME31	2½	4	0	Eng	II	4
ME33	Refrigeration	ME32	2	3	0	Eng	II—Elective	5
ME34	Steam Turbines	ME31	2	3	0	Eng	II—Elective	5
ME35	Heat Engineering	P4	2	3	0	Eng	I	3
ME36	Heat Engineering	ME35	2½	2	3	Eng	III & V	4
ME39	Engine Dynamics	ME21	2½	4	0	Eng	II—Elective	5
ME40	Aerodynamics	ME21,CI12	2	3	0	Eng	II—Elective	4
ME42	Heating and Air Cond.	ME21,CI12	2	3	0	Eng	{ II—Elective V	4 5
ME44	Power Plant Eng.	ME32	2½	4	0	Eng	II	5
ME51	Machine Design	ME24	3	6	0	Eng	II	5
ME52	Machine Design	ME51	3	6	0	Eng	II	5

No.	Course	Pre-requisite	Sem. Class Lab.			College	Curriculum	Yr.
			Hrs.	Hrs.	Hrs.			
Mechanical Engineering — Continued								
ME61	Mechanical Eng. Lab.	ME29,31	2	0	4	Eng	II & V	4
ME62	Mechanical Eng. Lab.	ME32,61	2	0	4	Eng	II & V	4
ME63	Mechanical Eng. Lab.	ME32,62	2½	1	3	Eng	II	5
ME69	Testing Materials Lab.	ME22	1½	1	3	Eng	I & V	4, 5
ME73	Aircraft Structures	ME23	2	3	0	Eng	II—Elective	5
ME74	Aircraft Structures		2	3	0	Eng	II—Elective	5
ME76	Aircraft Eng. Design	ME39	2½	6	0	Eng	II—Elective	5

Physics

P1	Physics I		3	3	0	{ Eng LA	All App & Pure Sci	1 1
P2	Physics I		3	3	0	Same as P1		
P3	Physics II	P1,2	2	3	0	{ Eng LA	All Math&Phys,	2 2
P3-A	General Physics		4	4	4	{ LA LA	Chem Biol.	3 2
P4	Physics II	P1,2	2	3	0	{ Eng LA	All Math&Phys,	2 2
P4-A	General Physics		4	4	4	{ LA LA	Chem Biol.	2 2
P5	Physics Laboratory	P1,2	1	0	2	{ Eng LA	I,II,IV,V Math&Phys,	2 2
P6	Physics Laboratory	P1,2	1	0	2	{ LA LA	Chem I,II,IV,V Math&Phys,	3 2
P7	Physics Laboratory	P1,2	2	0	4	Eng	III	2
P8	Physics Laboratory	P1,2	2	0	4	Eng	III	2
P9	Optics	P3,M6	3	3	2	LA	Elective	
P10	Optics	P9	3	3	2	LA	Elective	
P13	Acoustics	P3,M6	3	3	2	LA	Elective	
P14	Acoustics	P13	3	3	2	LA	Elective	
P15	Modern Physics	P4,M7	3	3	2	LA	Elective	
P16	Modern Physics	P15	3	3	2	LA	Elective	
P31	Introduction to Physics	M31	4	4	0	{ LA BA	Soc Sci Elective	1 1
P32	Introduction to Physics	M32	4	4	0	Same as P31		
P65	Thesis		3			LA	Elective	
P66	Thesis		3			LA	Elective	
P101	Theoretical Physics		3			LA	Graduate	
P102	Theoretical Physics		3			LA	Graduate	
P103	Quantum Mechanics		3			LA	Graduate	
P104	Quantum Mechanics		3			LA	Graduate	
P105	Applied Mathematics		3			LA	Graduate	
P106	Applied Mathematics		3			LA	Graduate	
P107	Graduate Thesis		2-4			LA	Graduate	
P108	Graduate Thesis		2-4			LA	Graduate	
P109	Graduate Thesis		2-4			LA	Graduate	
P110	Graduate Thesis		2-4			LA	Graduate	

Public Administration

PA2	Public Administration I		3	4	0	BA	Elective	
PA4	Political Concepts		3	4	0	BA	Elective	
PA5	Bus. and Govt.		2½	4	0	BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Public Administration — Continued</i>								
PA7	Public Administration II		3	4	0	BA	Elective	
PA8	Public Administration III		3	4	0	BA	Elective	
<i>Physical Education</i>								
PE1	Hygiene		1	1	0	All		1
PE3	Physical Training		0	2	0	All		1
PE4	Physical Training		0	2	0	All		1
PE5	Princ. of Phys. Ed.		2	3	0	LA	Elective	
PE6	Play and Recreation		2	3	0	LA	Elective	
PE7	Hist. of Phys. Ed.		2	3	0	LA	Elective	
PE8	Admin. of Phys. Ed.		2	3	0	LA	Elective	
PE9	Football		2	3	0	LA	Elective	
PE11	Track and Field Events		2	3	0	LA	Elective	
PE12	Basketball and Baseball		2	3	0	LA	Elective	
<i>Philosophy</i>								
Ph1	Intro. to Philosophy		2	3	0	LA	Elective	
Ph2	Problems of Philosophy		2	3	0	LA	Elective	
Ph3	History of Philosophy		2	3	0	LA	Elective	
Ph4	History of Philosophy		2	3	0	LA	Elective	
Ph5	Philosophy of Religion		2	3	0	LA	Elective	
Ph6	Logic		2	3	0	LA	Elective	
<i>Psychology</i>								
Ps1	Intro. to Diff. Psych.		2	3	0	LA	Engl,S.S.	2
Ps2	General Psychology		2	3	0	LA	Engl,S.S.	2
Ps1-B	Psychology		2	3	0	BA	Elective	
Ps2-B	Psychology		2	3	0	BA	Elective	
Ps3	Experimental Psychology	Ps2	3	2	4	LA	Psych	3
Ps4	Differential Psychology	Ps3	3	2	4	LA	Psych	3
Ps5	Educ. Psychology	Ps2	3	4	0	LA	Elective	
Ps7	Soc. Psych. of Everyday Life		2	3	0	LA	Psych	3
Ps8	Soc. Psych. Theory and Methods		2	3	0	LA	Psych	3
Ps9	Psych. of Personality	Ps2	3	4	0	LA	Elective	
Ps10	Abnormal Psychology	Ps9	3	4	0	LA	Elective	
Ps11	Applied Psychology	Ps9	2	3	0	LA	Elective	
Ps13	Psychological Testing	Ps4	2	3	0	LA	Elective	
Ps14	Adv. Experimental Lab.	Ps3	2	3	0	LA	Elective	
Ps61	Seminar		2	3	0	LA	Elective	
Ps62	Seminar	Ps61	2	3	0	LA	Elective	
<i>Sociology</i>								
S1	Intro. to Sociology		2	3	0	{ Eng BA LA	All All Engl,S.S.	4 3 2
S2	Principles of Sociology		2	3	0	Same as S1		
S3	Social Problems	S1,2	2	3	0	LA,BA	Elective	
S4	Social Pathology	S1,2	2	3	0	LA,BA	Elective	
S5	Criminology	S1,2	2	3	0	LA	Elective	
S6	Penology	S5	2	3	0	LA	Elective	
S7	Prin. of Social Ethics	S1,2	2	3	0	LA	Elective	
S8	Probs. in Social Ethics	S7	2	3	0	LA	Elective	
S9	The Family	S1,2	2	3	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Sociology — Continued</i>								
S10	The Family	S9	2	3	0	LA	Elective	
S11	Social Control	S3,4,Ph2	2	3	0	LA	Elective	
S12	Social Progress	S11	2	3	0	LA	Elective	
S13	Population Problems	S1,2	2	3	0	LA	Elective	
S14	Urban Sociology	S1,2	2	3	0	LA	Elective	
S15	History of Sociological Thought	S3,4,Ph2	2	3	0	LA	Elective	
S16	Sociology of Religion	S3,4	2	3	0	LA	Elective	
S61	Seminar		2	3	0	LA	Elective	
S62	Seminar	S61	2	3	0	LA	Elective	
S65	Thesis		3			LA	Elective	
S66	Thesis		3			LA	Elective	
<i>Spanish</i>								
Sp1	Elementary Spanish		3	3	0	LA	S.S.Elective	1
Sp1	Elementary Spanish		3	5	0	LA,BA	Elective	
Sp2	Elementary Spanish	Sp1	3	3	0	LA	S.S.Elective	1
Sp2	Elementary Spanish	Sp1	3	5	0	LA,BA	Elective	
Sp3	Intermediate Spanish	Sp2	3	4	0	LA,BA	Elective	
Sp4	Intermediate Spanish	Sp3	3	4	0	LA,BA	Elective	
Sp5	Span. Lit. of the Golden Age	Sp4	3	4	0	LA	Elective	
Sp6	Span. Lit. of the Golden Age	Sp4	3	4	0	LA	Elective	
Sp7	Mod. Spanish Literature	Sp4	3	4	0	LA	Elective	
Sp8	Mod. Spanish Literature	Sp4	3	4	0	LA	Elective	
Sp9	Mod. Span.-American Lit.	Sp4	3	4	0	LA	Elective	
Sp10	Mod. Span.-American Lit.	Sp4	3	4	0	LA	Elective	
<i>Unclassified</i>								
U4	Business Policy		2½	4	0	BA	Elective	
Ps2-A	Orientation		0	1	0	All		1
	Thesis (see page 139)							

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OFFICE HOURS

DEPARTMENT OF ADMISSIONS

9 A.M. to 4 P.M. daily
Saturday 12.00 N'N

Wednesday Evenings by
Appointment

Northeastern University

College of Liberal Arts

Paste a Small
Photo or
Snapshot
in This Space

APPLICATION FOR ADMISSION

(A non-returnable fee of five dollars must accompany this application. Make checks, money orders, or drafts payable to Northeastern University)

Boston, Mass.....19

To Director of Admissions:

I (Please print name in full)

hereby respectfully apply for admission to the College of Liberal Arts to major in the field checked:

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> Biology | <input type="checkbox"/> Economics |
| <input type="checkbox"/> Chemistry | <input type="checkbox"/> English |
| <input type="checkbox"/> Mathematics | <input type="checkbox"/> English—Journalism |
| <input type="checkbox"/> Physics | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Pre-Dental | <input type="checkbox"/> Sociology |
| <input type="checkbox"/> Pre-Medical | <input type="checkbox"/> Pre-Legal |

for the school period beginning 19....

NOTE: The applicant should fill out the following form (both sides) with care.

Residence.....Street

Town or City.....

State.....Tel.....

Date of Birth.....Age.....

Place of Birth.....

Race.....Religion.....Nationality.....

Graduate of.....High School, Year.....

Location of High School.....

Name of Principal

Other high schools you attended

Names of Principals.....

If not a graduate, state the years of attendance and why you left.....

Father's, Mother's, or Guardian's Name.....

Address.....

Father's work, business or profession.....

Names and addresses of two other persons, to whom we may direct inquiries concerning you.....

Weight.....Height.....

Have you any physical infirmities? Explain, if any.....

Defects of speech.....

Defects of hearing.....

Defects of sight.....

Bodily infirmities.....

Is your general health good, fair, or poor?.....

Have you done collegiate work elsewhere?.....

If so, name and address of college or university.....

Name of person who will furnish transcript of your college record.....

Do you expect advance credit for past collegiate work?.....

Are you a citizen of the United States?.....

List all athletics and other extra curricula high school activities you have engaged in.....

Names and addresses of all past employers with brief description of each job, length of employment, and wages received.....

Declaration of Parent or Guardian

This application has been read by me and has my approval.

.....
Signature of Parent or Guardian

Date.....

Milton J. Schlagenhauf, Director of Admissions
Northeastern University
360 Huntington Avenue
Boston, Mass.

Dear Sir:

Please send me additional information on the following points:

.....

.....

.....

.....

.....

.....

.....

.....

Name.....

Street and Number.....

Town or City.....

State.....

NORTHEASTERN UNIVERSITY

(CO-EDUCATIONAL)

COLLEGE OF LIBERAL ARTS

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical (with an Aeronautical option), Electrical, Chemical, and Industrial Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

COLLEGE OF BUSINESS ADMINISTRATION

Offers three curricula: Accounting, Marketing and Advertising, and Industrial Administration. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Economics, English, Government, History, Mathematics, Physics, Psychology, and Sociology. A special program preparing for admission to the School of Law is also available. Complete program equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Associate in Arts title conferred.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the co-operative plan. After the freshman year, students may alternate their periods of study with periods of work in the employ of business or industrial concerns at ten-week intervals. Under this plan they gain valuable experience and earn a large part of their college expenses.

In addition to the above schools the University has affiliated with it and conducts: the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the title of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

Law School

47 Mt. Vernon Street

Other Schools

360 Huntington Avenue

Boston, Massachusetts

Telephone: KENmore 5800



Northeastern University

COLLEGE OF
ENGINEERING
CATALOGUE
1943-1944



(CO-EDUCATIONAL)

BOSTON, MASSACHUSETTS

January, 1943

GIFTS AND BEQUESTS

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program
- (b) For general endowment
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University".

NORTHEASTERN UNIVERSITY

College of Engineering

Conducted on the Co-operative Plan

Catalogue

1943-1944

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Division A—Freshman Calendar, 1943-1944

1943

MAY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑬	17	18	19	20	21	22
⑳	24	25	26	27	28	29
⑳	⑳					

JUNE

S	M	T	W	T	F	S
			1	2	3	4
⑥	7	8	9	10	11	12
⑬	14	15	16	⑬	18	19
⑳	21	22	23	24	25	26
⑳	⑳	⑳	⑳			

JULY

S	M	T	W	T	F	S
				①	②	③
④	⑤	6	7	8	9	10
⑪	12	13	14	15	16	17
⑱	19	20	21	22	23	24
⑳	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
①	2	3	4	5	6	7
⑧	9	10	11	12	13	14
⑮	16	17	18	19	20	21
⑳	23	24	25	26	27	28
⑳	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	⑥	7	8	9	10	11
⑫	⑬	⑭	⑮	⑯	⑰	⑱
⑲	20	21	22	23	24	25
⑳	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
③	4	5	6	7	8	9
⑩	11	⑫	13	14	15	16
⑰	18	19	20	21	22	23
⑳	25	26	27	28	29	30
⑳						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
⑦	8	9	10	⑪	12	13
⑭	15	16	17	18	19	20
⑰	22	23	24	⑰	⑰	⑰
⑳	29	30				

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	⑤	7	8	9	10	11
⑫	13	14	15	16	17	18
⑰	20	21	22	⑰	⑰	⑰
⑳	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑱	⑱	⑱	⑱	⑱	⑱	⑱
⑳	⑳	⑳	⑳	⑳	⑳	⑳
⑳	⑳					

Days on which college exercises are held are shown thus: 1 2 3

Sundays, holidays, and vacations are shown thus: ① ② ③

Division B—Freshman Calendar, 1943-1944

1943

JULY

S	M	T	W	T	F	S
				①	②	③
④	⑤	⑥	⑦	⑧	⑨	⑩
⑪	12	13	14	15	16	17
⑮	19	20	21	22	23	24
⑫	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
①	2	3	4	5	6	7
⑧	9	10	11	12	13	14
⑮	16	17	18	19	20	21
⑫	23	24	25	26	27	28
⑳	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	⑥	⑦	⑧	⑨	⑩	⑪
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	25
⑫	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
③	4	5	6	7	8	9
⑩	11	⑫	13	14	15	16
⑮	18	19	20	21	22	23
⑫	25	26	27	28	29	30
⑳						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
⑦	8	9	10	⑪	12	13
⑭	15	16	17	18	19	20
⑮	22	23	24	⑫	26	27
⑳	29	30				

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	⑫	⑮	⑮	⑮	⑮	⑮
⑮	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑮	17	18	19	20	21	22
⑮	24	25	26	27	28	29
⑳	31					

FEBRUARY

S	M	T	W	T	F	S
			1	2	3	4
⑥	7	8	9	10	11	12
⑮	14	15	16	17	18	19
⑮	21	⑮	23	24	25	26
⑮	28	29				

MARCH

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	25
⑮	⑮	⑮	⑮	⑮	⑮	

Days on which college exercises are held are shown thus: 1 2 3

Sundays, holidays, and vacations are shown thus: ① ② ③

Upperclass Calendar, 1943-1944

1943

APRIL

S	M	T	W	T	F	S
				1	2	3
(4)	5	6	7	8	9	10
(11)	12	13	14	15	16	17
(18)	(19)	20	21	22	23	24
(25)	26	27	28	29	30	

MAY

S	M	T	W	T	F	S
						1
(2)	3	4	5	6	7	8
(9)	10	11	12	13	14	15
(16)	17	18	19	20	21	22
(23)	24	25	26	27	28	29
(30)	(31)					

JUNE

S	M	T	W	T	F	S
		1	2	3	4	5
(6)	7	8	9	10	11	12
(13)	14	15	16	(17)	18	19
(20)	(21)	(22)	(23)	(24)	(25)	(26)
(27)	(28)	(29)	(30)			

JULY

S	M	T	W	T	F	S
				(1)	(2)	(3)
(4)	(5)	6	7	8	9	10
(11)	12	13	14	15	16	17
(18)	19	20	21	22	23	24
(25)	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
(1)	2	3	4	5	6	7
(8)	9	10	11	12	13	14
(15)	16	17	18	19	20	21
(22)	23	24	25	26	27	28
(29)	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
(5)	(6)	7	8	9	10	11
(12)	13	14	15	16	17	18
(19)	20	21	22	23	24	25
(26)	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
(3)	4	5	6	7	8	9
(10)	11	(12)	13	14	15	16
(17)	18	19	20	21	22	23
(24)	25	26	27	28	29	30
(31)						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
(7)	8	9	10	(11)	12	13
(14)	15	16	17	18	19	20
(21)	22	23	24	(25)	26	27
(28)	29	30				

Days on which Division A students are in college are shown thus: 1 2 3

Days on which Division B students are in college are shown thus: **1 2 3**

Sundays, holidays, and vacations are shown thus: (1) (2) (3)

Upperclass Calendar, 1943-1944

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
(5)	6	7	8	9	10	11
(12)	13	14	15	16	17	18
(19)	20	21	22	23	24	(25)
(26)	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						(1)
(2)	3	4	5	6	7	8
(9)	10	11	12	13	14	15
(16)	17	18	19	20	21	22
(23)	24	25	26	27	28	29
(30)	31					

FEBRUARY

S	M	T	W	T	F	S
			1	2	3	4
(6)	7	8	9	10	11	12
(13)	14	15	16	17	18	19
(20)	21	(22)	23	24	25	26
(27)	28	29				

MARCH

S	M	T	W	T	F	S
				1	2	3
(5)	6	7	8	9	10	11
(12)	13	14	15	16	17	18
(19)	20	21	22	23	24	25
(26)	27	28	29	30	31	

APRIL

S	M	T	W	T	F	S
						1
(2)	3	4	5	6	7	8
(9)	10	11	12	13	14	15
(16)	17	18	(19)	20	21	22
(23)	24	25	26	27	28	29
(30)						

MAY

S	M	T	W	T	F	S
	1	2	3	4	5	6
(7)	8	9	10	11	12	13
(14)	15	16	17	18	19	20
(21)	22	23	24	25	26	27
(28)	29	(30)	31			

JUNE

S	M	T	W	T	F	S
				1	2	3
(4)	5	6	7	8	9	10
(11)	12	13	14	15	16	(17)
(18)	(19)	(20)	(21)	(22)	(23)	(24)
(25)	(26)	(27)	(28)	(29)	(30)	

Days on which Division A students are in college are shown thus: **1 2 3**

Days on which Division B students are in college are shown thus: **1 2 3**

Sundays, holidays, and vacations are shown thus: (1) (2) (3)

Calendar for the College Year, 1943-1944

1943

- | | | | |
|--------------------|---------|------------|--|
| APRIL | 12 | Monday. | Opening of college for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen. |
| APRIL | 17 | Saturday. | Entrance condition examinations. |
| APRIL | 19 | Monday. | Patriots' Day. (College exercises omitted.) |
| MAY | 3 | Monday. | Registration and opening of college year for Division A freshmen. Students failing to register promptly on May 3rd will be charged a late registration fee of five dollars (\$5.00). |
| MAY | 31 | Monday. | Observation of Memorial Day. (College exercises omitted.) |
| JUNE | 21-26 | | Vacation for Division A upperclassmen. |
| JUNE | 23 | Wednesday. | Entrance condition examinations. |
| JUNE | 24 | Thursday. | Entrance condition examinations. |
| JUNE | 28 | Monday. | Co-operative work period begins for Division A upperclassmen. |
| JUNE
TO
JULY | 28
5 | } | Vacation for Division B upperclassmen and for Division A freshmen. |
| JULY | 6 | | Tuesday. |
| JULY | 12 | Monday. | Registration and opening of college year for Division B freshmen. Students failing to register promptly on July 12 will be charged a late registration fee of five dollars (\$5.00). |
| SEPTEMBER | 6 | Monday. | Labor Day. (College exercises omitted.) |
| SEPTEMBER | 6-11 | | Vacation for Division B freshmen. |

- SEPTEMBER 13 *Monday*. Second semester begins for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- SEPTEMBER 13-18 Vacation for Division A freshmen.
- SEPTEMBER 20 *Monday*. Second semester begins for Division A freshmen.
- OCTOBER 12 *Tuesday*. Columbus Day. (College exercises omitted.)
- NOVEMBER 11 *Thursday*. Armistice Day. (College exercises omitted.)
- NOVEMBER 22 *Monday*. Second semester begins for Division B upperclassmen and Division B freshmen. Co-operative work period begins for Division A upperclassmen.
- NOVEMBER 24 *Wednesday*. College exercises omitted after 1:00 p.m.
- NOVEMBER 25 *Thursday*. Thanksgiving Day. (College exercises omitted.)
- DECEMBER 20-25 Vacation for Division B freshmen.
- DECEMBER 24 *Friday*. College exercises omitted after 1:00 p.m.
- DECEMBER 25 *Saturday*. Christmas. (College exercises omitted.)

1944

- JANUARY 1 *Saturday*. New Year's Day. (College exercises omitted.)
- JANUARY 30 *Sunday*. Baccalaureate and Commencement.
- JANUARY 31 *Monday*. Opening of new College year for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- FEBRUARY 22 *Tuesday*. Washington's birthday. (College exercises omitted.)
- APRIL 10 *Monday*. Opening of college year for Division B upperclassmen. Co-operative work period begins for Division A upperclassmen.

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JOHN RUSSELL MACOMBER
GEORGE ARTHUR MALLION
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STUART CRAIG RAND
JAMES LORIN RICHARDS
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RUSSELL MARYLAND SANDERS
ANDREW SEBASTIAN SEILER
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RUSSELL WHITNEY

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MYRA EDNA WHITE

WILFRED STANLEY LAKE

WILLIAM CROMBIE WHITE

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NORTHEASTERN UNIVERSITY is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) an Executive Committee which serves as an Ad Interim Committee between the regular meetings of the Board of Trustees and has general supervision of the financial and educational policies of the University; (b) a Committee on Housing which has general supervision over the buildings and equipment of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Development Committee which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University, from the outset, had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

With respect to program, Northeastern has limited itself:

- To offering, in its several schools, basic curricula from which non-essentials have been eliminated,
- To effective teaching,
- To advising and guiding students,
- To giving students the chance to build well-rounded personalities through a balanced program of extra-curricular activities.

The Northeastern Plan of Education is especially designed for the student who must earn while he learns. In the main, it consists of two definite types of education:

- Co-operative Education by Day,
- Adult Education by Night.

The plan has been developed in such a way that experience in jobs with pay is utilized to help boys of limited financial resources secure an education and at the same time gain the maximum

educational benefit from their practical experience. So far as the New England States are concerned, Northeastern University is the only institution whose day colleges, other than the School of Law, are conducted under the Co-operative Plan.

The several schools and programs of the University are operated either under the name "Northeastern University" or by its affiliated schools—the Lincoln Schools and The Huntington Day School for Boys. The following is a brief outline of the principal types of educational opportunities offered.

1. In the field of Co-operative Education there are three day colleges — the College of Liberal Arts, the College of Engineering, and the College of Business Administration. All of these colleges offer five-year curricula. The College of Liberal Arts offers majors in the usual fields of the arts and the sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. The College of Engineering, one of the largest engineering colleges in the United States, has curricula in Civil, Mechanical (with Aeronautical option), Electrical, Chemical, and Industrial Engineering. The College of Business Administration has curricula in Accounting, Marketing and Advertising, and Industrial Administration. The College of Engineering and the College of Business Administration confer the degree of Bachelor of Science with specification indicating the field of specialization. The Co-operative Plan under which all of these day colleges operate enables the student to alternate regular periods of classroom instruction with supervised employment in an industrial or commercial position, thus combining theory and practice in an exceedingly effective manner. Apart from the educational advantages of the Co-operative Plan is the opportunity for self-support while the student is pursuing his studies at Northeastern University. During the co-operative periods, students not only gain experience but are also paid for their services. Approximately three hundred business and industrial concerns co-operate with Northeastern University in making this program effective.
2. The School of Law conducts both a day and an evening undergraduate program, each program preparing for admission to the bar and for the practice of the law and leading to the degree of Bachelor of Laws.
3. The Adult Education Program has been developed in the evening work of the School of Law as indicated above, in the School of Business, and in the evening courses of the College of Liberal Arts. The School of Business has curricula in Management, Accounting, and Engineering and

Management. The School awards the Bachelor of Business Administration degree with specification. A division of the School of Business is also conducted in Springfield. The College of Liberal Arts offers certain of its courses constituting a program, three years in length, the equivalent in hours to one-half of the requirements for the A.B. or S.B. degree, providing a general education and preparation for admission to the School of Law. The title of Associate in Arts is conferred upon those who complete this program.

4. The Adult Education Program has also been developed through the Lincoln Schools, which are affiliated with and conducted by Northeastern University. The classes in these schools are held at convenient evening hours. The Lincoln Technical Institute offers curricula upon a college level in various phases of engineering leading to the title of Associate in Engineering; whereas the Lincoln Preparatory School, accredited by the New England College Entrance Certificate Board, prepares students for admission to college and offers other standard high school programs.
5. The Huntington Day School for Boys, also affiliated with and conducted by Northeastern University, is the outgrowth of a demand in the city of Boston for an urban preparatory school with high educational standards which would furnish thorough preparation for admission to the leading colleges and universities. While easily accessible to the various sections of Boston and to the suburbs, it has the facilities of a country day school and offers a country day school program. This School is one of the leading preparatory schools of the country.

Northeastern University and Affiliated Schools
Including War Courses
Statistical Summary
 1941-1942

	<i>Administrative and Instructional Staff</i>	<i>Enrollment</i>
General Administration	9	
Northeastern University		
College of Liberal Arts		
Day	66	508
Evening	16	169
College of Engineering	90	1659
College of Business Administration	48	638
School of Business	113*	1634*
School of Law	35*	391*
Affiliated Schools		
Lincoln Technical Institute	46	962
Lincoln Preparatory School	22	583
Huntington Day School for Boys	15	155
Huntington Summer School	10	133
	<u>470</u>	<u>6832</u>
Less Duplicates	143	327
	<u>143</u>	<u>306</u>
War Courses		
Civilian Pilot Training Program	4	81
Engineering Defense Program	109	1881
	<u>113</u>	<u>1962</u>
Less Duplicates	1	112
	<u>1</u>	<u>16</u>
	439	8472
Less Duplicates between War Courses and Schools and Colleges	37	76
Different Number	<u>402</u>	<u>8396</u>

*These figures include the administrative officers, faculties, and students of the Divisions of the University in Worcester, Springfield, and Providence.

The Co-operative Plan

How It Works

THE co-operative plan works in the following manner. Upperclassmen are divided into two nearly equal groups, one of which is called Division A and the other Division B. Each man is assigned a job with some business or industrial concern. So far as possible each man in one Division is paired with a man in the other Division, so that the two, by taking turns, may occupy one job throughout the entire year. The Division A student starts the college year with ten weeks of classroom work, while the Division B student starts his year with a term at co-operative work. At the end of that term the Division A student goes out to work with a co-operating firm, while his place in the classroom is then taken by his *alternate*, the corresponding Division B student. When ten weeks more have passed, the Division A man returns to college, and the Division B man returns to the co-operative job. The alternation of work and classroom study continues throughout the year so that an upperclassman has annually two terms at college, two terms at co-operative work, and a brief vacation.

Faculty Co-ordinators

Students are assigned to a co-ordinator, who interviews them periodically during their freshman year for the purpose of determining their background, abilities, temperaments, and aptitudes. During these interviews the co-ordinator discusses various fields of activity and answers such questions as the students may have in regard to the many phases of business and industry. Each student is studied in the light of his physical condition, scholastic ability, and other factors affecting his probable success in vocational life. These interviews culminate in an agreement between the student and his co-ordinator regarding the field of co-operative work in which the student is to be placed. During his upperclass years the student continues to have frequent conferences with his co-ordinator regarding vocational adjustments and personal problems. In this way the progress of every student is observed and co-ordinated with his college work to the end that he may obtain maximum values from his training at Northeastern.

Placement

The co-ordinator visits co-operating firms and arranges with them for the employment of the students under his charge. The range of opportunities available to Northeastern students is wide,

including practically all phases of industrial life. As a general rule, sophomores are placed upon routine and laborious jobs through which they may prove their fitness for more responsible work. The jobs upon which Northeastern students are employed are in no sense protected opportunities. They are regular jobs under actual business conditions and are held in competition with other sources of supply. The only special privilege accorded Northeastern students is that of attending college on the co-operative plan. The University expects every student to stand on his own feet while he is on co-operative work, and advancement to the more responsible jobs is based entirely upon merit.

Supervision and Guidance

While the University does not adopt a paternal attitude toward co-operative work, it nevertheless assumes certain responsibilities toward students and co-operating firms. Co-ordinators visit each job in order that the employer may report upon the student's achievement and that necessary adjustments may be made. Co-ordinators supervise the assignment of students to various jobs and in conjunction with employers arrange for promotions and training schedules. Problems that arise on co-operative work are adjusted by common agreement of co-ordinator, student, and employer. In the event of special difficulties or dissatisfaction, the case may be adjusted by the Committee on Co-operative work, which comprises several members of the faculty.

Through a series of co-operative work reports prepared during their working periods, students are led to analyze their jobs and to develop a thoughtful and investigative attitude toward their working environment. A most important phase of co-operative work is the opportunity afforded for guidance by the frank discussion of actual problems encountered on the job. The intimate contact between co-ordinator and student is of great worth in helping the student to get the most value from each co-operative work assignment. While the University endeavors to provide every possible opportunity for its students, it expects them at the same time to take the initiative and to assume the responsibility involved in their individual development. To every student are available the counsel and guidance of the faculty, and every resource at its disposal. But the faculty does not coerce students who are uninterested or unwilling to think for themselves.

The co-operative plan is thus designed specifically to provide actual working conditions which afford the student practical experience, give meaning to his program of study, and train him in reliability, efficiency, and team work.

Correlation of Theory and Practice

Co-operating companies employ the students in the various departments of their establishments. The training is thorough. To derive the greatest value from his co-operative work the student is advised to continue in the employ of his co-operating firm for at least one year after graduation, since certain types of work which would afford him valuable experience cannot be made available to him while he is alternating between work and study. Statistics compiled over a period of many years show that on the average about fifty per cent of each graduating class remain with co-operating employers after graduation.

Co-operative Work Reports

The values to be derived from practical experience are further enhanced by required report writing. These co-operative work reports are written during the working periods by all co-operative students. A complete job analysis is required as the first report written on any new co-operative work assignment. Subjects of other reports are selected by the student after conference with his Co-ordinator of Co-operative Work, by whom they must be approved. The reports are designed to encourage observation and investigation on the part of the students and to help them to appreciate more fully the extent and value of their experience. These reports are carefully read by the Co-ordinator and are discussed with the student during the following college period. Exceptionally valuable results are obtained from these reports. The value derived must necessarily be directly proportional to the conscientious and intelligent concentration of effort by the student upon this phase of the work.

Co-operative Work Records

Complete and detailed records are kept of the co-operative work of each student. They are based upon reports made by the employer at the end of each working period; upon occasional personal interviews between the employer and the Co-ordinator; and upon various evidences of the student's attitude toward all the phases of his co-operative work. It is not possible for the student to secure a degree unless this part of the curriculum is completed satisfactorily. These records of practical experience serve as a valuable future reference for the Alumni Placement Division of the Department.

Positions Available

Because of uncertainties of business conditions, as well as other reasons beyond its control, the University cannot and does not guarantee to place students. Although the University in no way discriminates among students of various races and religions, considerable difficulty has been experienced in placing at co-operative work the members of certain racial groups and students who are physically handicapped. However, past experience has demonstrated that students who are willing and capable of adapting themselves to existing conditions are almost never without employment except in periods of severe industrial depression.

Earnings

It should be understood that the primary purpose of the Co-operative Plan is training. For this reason the rates of pay for students tend to be low because students are given the privilege of attending college on the Co-operative Plan and because effort is made to provide the student with the opportunity of being transferred, at reasonable intervals, from one department to another of the co-operating company.

The minimum rate of pay will be governed to a very large extent by prevailing wages and hours laws. To assist the student in budgeting his expenses, however, he should plan in normal times on a weekly rate of pay equal to the minimum prevailing rates for the metropolitan Boston area.

Location of Work

It is the policy of the University to assign students to co-operative work within commuting distance of their homes. This is not always possible, however, and at times it may be necessary for students to live away from home in order to obtain satisfactory and desirable co-operative work assignments.

Types of Co-operative Work

Insofar as possible students are placed at co-operative work in that general field for which they express preference, provided that aptitude, physical ability, temperament, and other personal qualities appear to fit them for this field. Usually students are placed first in those jobs of an organization where they may learn the fundamental requirements of the business.

For example, a student interested in manufacturing might be started as an operative on some machine in the plant. As his progress and other conditions warranted he would be transferred to other types of work such as shipping, inspecting, cost finding, adjusting complaints, or bookkeeping, and so on, so that in the course of his four years co-operative training he would have the opportunity to acquire a substantial background in at least some of the functions of factory administration. This progressive type of training is more readily obtained in the employ of one company. A change of company each year provides more a change of environment than a progression of experiences.

Engineering firms, manufacturing companies, public utilities, and many other types of enterprises are employing Northeastern students. In some cases definite training schedules have been established so as to permit the student one full year in each of several important departments.

Typical Co-operative Training Schedules

These schedules are arranged with the basic idea of giving the student a comprehensive training through the several different departments, but must of necessity be varied in accordance with the needs of those departments.

BOSTON EDISON COMPANY

The schedule of the Boston Edison Company is divided into the following general classifications. Very few co-operating students obtain experience in all branches, but students progress from year to year in the respective branches as conditions require.

Standardizing

- (a) Testing and standardizing of electrical instruments
- (b) Miscellaneous standardization
- (c) Repairs on electrical instruments
- (d) Laboratory high voltage tests

Steam Practice

- (a) Turbine, engine and boiler tests
- (b) Instrument tests and repairs
- (c) Miscellaneous tests

Electrical Testing

- (a) Testing and repairing of electrical instruments in power stations and sub-stations
- (b) Cable tests
- (c) High voltage tests on apparatus and in the field
- (d) Checking up construction work
- (e) Miscellaneous electrical tests

Chemical Engineering

- (a) Fuel analysis
- (b) Miscellaneous tests and analysis of oils, water paints, and other materials

*Photography**Office Work*

HUNT-SPILLER MANUFACTURING CORPORATION

- ONE YEAR General laboratory and plant work, including preparation of samples
Pyrometry
Use and care of metallurgical apparatus
- ONE YEAR Complete analysis of coal, coke, limestone, sand, iron, soil, etc.
- ONE YEAR Keeping of general metallurgical records, filing, and making of reports
- ONE YEAR Analysis for combined, graphitic, and total carbon with a complete knowledge of a carbon combustion apparatus

PEPPERELL MANUFACTURING COMPANY

- ONE YEAR Stock Records
- ONE YEAR Production Analysis
- ONE YEAR Inventory Control

General Information

College Expenses

Tuition

THE tuition for all curricula in the Day Colleges is \$250 per year, or \$125 per term. Certain fees and deposits are also required as specified in the following paragraphs. A complete statement of tuition and fee payments is given on page 33.

Students who carry academic loads of greater or less than normal amount may pay their tuition on a semester hour basis.

University Fee

All students are charged a University Fee of twenty-four dollars (\$24) a college year. This fee for upperclassmen is payable in two installments: twelve dollars (\$12) with the first payment of tuition and twelve dollars (\$12) with the second payment of tuition. For freshmen it is payable fourteen dollars (\$14) with the first tuition payment and ten dollars (\$10) with the second tuition payment.

The University Fee covers library, laboratory, materials charges, and similar items for which separate fees are frequently charged by other colleges and universities. It is payable by all students regardless of the curriculum in which they are enrolled.

Student Activities Fee

Each student in the Day Colleges is charged a student activities fee of sixteen dollars (\$16), for upperclassmen payable one-half with each tuition payment and for freshmen payable entirely with the first tuition payment. This fee supports in part certain student activities, and includes membership in the *Northeastern University Athletic Association* and subscription to *The Northeastern News*, the college paper.

The services of a physician are also available for all students under this fee. Minor ailments are treated by the college health officers without additional charge. If the student shows signs of more serious illness, he is immediately advised to consult a specialist or return to his home, where he can get further treatment.

No student shall be required to pay more than sixty dollars (\$60) in fees (University and Student Activities) during any one calendar year.

Chemical Laboratory Deposit

(Applies only to students taking chemical and chemical engineering laboratory work)

All upperclassmen taking chemical or chemical engineering laboratory work are required to make a deposit of ten dollars

(\$10) at the beginning of each term from which deductions are made for breakage, chemicals, and destruction of apparatus in the laboratory. Freshmen taking chemistry make a chemical laboratory deposit of ten dollars (\$10) at the beginning of the year.

Any unused portion of this deposit will be returned to the student at the end of the college year. If the charge for such breakage, chemicals, or destruction of apparatus is more than the sum deposited, the student will be charged the additional amount.

Schedule of Payments for Freshmen

<i>Division A</i>	
<i>Date Due</i>	<i>Amount</i>
May 3, 1943	Tuition \$125.00
	Fees 30.00
	Chem. Lab. Deposit 10.00
	<hr/>
	\$165.00
September 20, 1943	Tuition \$125.00
	Fees 10.00
	<hr/>
	\$135.00
<i>Division B</i>	
July 12, 1943	Tuition \$125.00
	Fees 30.00
	Chem. Lab. Deposit 10.00
	<hr/>
	\$165.00
November 29, 1943	Tuition \$125.00
	Fees 10.00
	<hr/>
	\$135.00

Schedule of Payments for Upperclassmen

<i>Division A</i>	
*April 12, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00
*September 13, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00
<i>Division B</i>	
*July 6, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00
*November 22, 1943	Tuition \$125.00
	Fees 20.00
	<hr/>
	\$145.00

Deferred Payment Fee

There will be a \$2.00 deferred payment fee added to all bills which are not paid by the Saturday following the date on which

*Students taking chemical laboratory work pay a deposit of \$10 additional.

payments fall due. When further extensions of time are given on payments which have been previously deferred, an additional \$2.00 fee will be charged for each extension.

Failure to make the required payments on time, or to arrange for such payments, is considered sufficient cause to bar the student from classes or suspend him from co-operative work until the matter has been adjusted with the Registrar.

Late Registration Fee

A fee of \$5.00 will be charged for failure to register in accordance with prescribed regulations on the dates specified in the college calendar.

Graduation Fee

A fee of ten dollars (\$10) covering graduation is required by the University of all candidates for a degree. This fee must be paid before the end of the seventh week of the second term in the senior year.

Payments

All payments should be made at the treasurer's office which is located on the first floor of Richards Hall. Checks should be made payable to Northeastern University.

Refunds

The University provides all instruction and accommodations on a yearly basis; therefore, *no refunds are granted except in cases where students are compelled to withdraw on account of personal illness or to enter the armed forces of the nation.*

Expenses

The following tables, compiled from expense returns submitted by the student body, give an idea of freshman expenditures under ordinary conditions.

Estimated College Expenses for a Freshman

Application Fee.....	\$ 5.00
Tuition.....	250.00
University Fee.....	24.00
Chemical Laboratory Deposit.....	10.00
Student Activities Fee.....	16.00
Books and Supplies.....	35.00
	<hr/>
	\$340.00

(Engineering students should add approximately \$25 for drawing instruments and equipment.)

*Estimated Living Expenses Per Week for a Freshman
Residing Away from Home*

Room Rent.....	\$ 4.00
Board.....	7.00
Laundry.....	1.00
Incidentals.....	2.00
	\$14.00

The figures given above are approximate and may not exactly apply to any one student; however, they will be found to represent fairly well the expense of a freshman who lives comfortably but without extravagance.

Textbooks and Supplies

The Northeastern University Bookstore, located in the Basement of Richards Hall, is a department of the University and is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the University may be purchased at the Bookstore.

All students may purchase Day College textbooks which are for their own use at a ten per cent discount. The ten per cent discount will not apply on equipment, supplies, or novelties. It is the policy of the Bookstore, however, to stock these materials and to sell them at the lowest possible prices.

Part-Time Work

Students who find it necessary to accept part-time jobs while attending college may obtain such work through the Director of Co-operative Work.

No student is justified in assuming that the University will take care of his expenses or guarantee to supply him with work sufficient to meet all his needs.

A student should have available a reserve fund adequate to provide for immediate needs and unexpected contingencies. This should ordinarily amount to at least the first year's tuition plus the student activity and other fees, room rent, and board for several weeks, or a total of about \$500.

Grades and Examinations

Examinations

Examinations covering the work of the term are usually held at the close of each term. Exceptions may be made in certain courses where, in the opinion of the instructor, examinations are not necessary.

Condition Examinations

Condition examinations are given on the registration day of each ten-week period. The charge is three dollars (\$3.00) for each condition examination. No student may take more than two condition examinations on any one day.

Freshmen may take one condition examination to remove a deficiency in a first semester course on the upperclass registration day which comes at least ten weeks after the close of the first semester of the freshman year.

A student must petition to take a condition examination at least two weeks in advance of the date the examination is desired.

Senior Condition Examinations

No condition examinations are given at the end of the second term. This means that a failure in a second term senior course cannot be made up before Commencement.

No senior will be permitted to take more than one condition examination at the beginning of the second term.

The responsibility for the removal of a condition rests with the student, who is required to ascertain when and how the condition can be removed.

Grades

A student's grade is officially recorded by letters, as follows:

- A superior attainment
- B above average attainment
- C average attainment
- D lowest passing grade, poor attainment (the faculty will accept only a limited amount of grade D work toward the Bachelor's degree)
- F failure, removable by condition examination
- FF complete failure, course must be repeated in class
- I incomplete, used for intermediate grades only to signify that the student has not had time to make up work lost through excusable enforced absence from class
- L used in all cases of the removal of a failure by condition examination or by attendance at summer term.

A student who does not remove a condition before that course is again scheduled, a year later, must repeat the course. A condition in more than one subject may involve the loss of assignment to co-operative work.

The responsibility for the removal of a condition rests with the student who is required to ascertain when and how the condition can be removed.

Dean's List

A Dean's List, issued at the end of each term, contains the names of upperclass students who have an honor grade average in all subjects during the preceding period. Freshmen who achieve high scholastic standing are included on a Freshman Honor List, which is published at the end of each grading period. No student under disciplinary restrictions is eligible for either of the honor lists.

Reports on Scholastic Standing

Freshman reports are issued at the end of each grading period; upperclass reports, at the end of each term. Questions relative to grades are to be discussed with the student's faculty adviser.

Students are constantly encouraged to maintain an acceptable quality of college work. Parents and students are always welcomed by the college officers and faculty advisers for conference upon such matters.

Parents or guardians will be notified whenever students are advised or required to withdraw from the University.

General Conduct

Conduct

It is assumed that students come to the University for a serious purpose and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building or to any of the furniture, apparatus, or other property of the University, the damage will be charged to the student or students known to be immediately concerned; but if the persons who caused the damage are unknown, the cost for repairs may be assessed equally upon all the students of the University.

Students are expected to observe the accepted rules of decorum, to obey the regulations of the University, and to pay due respect to its officers. Conduct inconsistent with the general good order of the University or persistent neglect of work may be followed by dismissal; if the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is desired to administer the discipline of the University so as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present as his own any work which he has not performed, or to pass any examination by improper means, is regarded as a most serious offense and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

Scholastic Year for Seniors

Seniors of either division who are candidates for a degree in the current year must have completed all academic work, class assignments, theses, regular and special examinations, before twelve o'clock noon of the Saturday next following the close of recitations for seniors.

Attendance

Students are expected to attend all exercises in the subjects they are studying unless excused in advance. Exercises are held and students are expected to devote themselves to the work of the University between 9:00 A.M. and 5:00 P.M., except for a lunch period, on every week day.

No cuts are allowed. A careful record of each student's attendance upon class exercises is kept. Absence from regularly scheduled exercises in any subject will seriously affect the standing of the student. It may cause the removal of the subject or subjects from his schedule. If he presents a reasonable excuse for the absence, however, he may be allowed to make up the time lost and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course may designate.

Laboratory work can be made up only when it is possible to do so during hours of regularly scheduled instruction.

Absences from exercises immediately preceding or following a recess are especially serious and entail severe penalties.

Attendance at all mass meetings of the student body is compulsory. Exceptions to this rule are made only when the student has received permission from the Director of Student Activities previous to the meeting from which he desires to be absent.

Student Housing

Housing Regulations

The University endeavors to exercise due consideration and care for the student's welfare while he is in residence. This necessitates the adoption of the rules and regulations presented herewith.

1. Assignments will be made when the student registers.
2. Students may inspect rooms before accepting an assignment; after reaching a decision students must notify the office of the Registrar, 254R.

3. Students who accept room assignments must retain them for the period of their residence, unless given permission by the Registrar to change.

4. Students are not permitted to live in unsupervised quarters. Under no conditions are groups of students permitted to lease apartments.

5. Students are not permitted to engage rooms without the prior approval of the University. Those violating this rule will be required to give up such rooms immediately and will be assigned by the University to approved quarters.

6. Violation of any of the above rules is considered a breach of discipline and will be dealt with accordingly.

Dormitories

At present the University does not maintain dormitories. Provision, however, is made for students to secure rooms in the vicinity. Many freshmen prefer to take room and board at the fraternity houses, which are all supervised by the University through faculty advisers. For information relative to such housing write the Director of Admissions.

Rooms in the dormitory of the Huntington Avenue Branch of the Boston Y.M.C.A. may be secured only through the Housing Department of the Y.M.C.A. The applicant must present himself in person to a representative of the Department before assignment will be made.

Applicants desiring to room in the Association dormitory are advised to write the Housing Department of the Huntington Avenue Branch, 316 Huntington Avenue, Boston, Massachusetts.

Freshman Counseling

Freshman Orientation Period

In order that freshmen may be ready to pursue their academic work with greater composure and be somewhat acclimated before the beginning of scholastic work, three or four days prior to the first term are devoted to a freshman orientation period. During this time freshmen are advised as to choice of program, and assisted in every way possible in order that they may be prepared to begin serious study and work on the first day of the college term. All freshmen are required to attend all exercises at the University scheduled during the orientation period.

An optional feature of the orientation program is the freshman camp conducted under the auspices of the Student Union. The camp is planned particularly for out-of-town students, although commuters are welcomed. It aims at providing a stimulating and wholesome environment under vacation conditions in which the new men may become acquainted with one another and with members of the faculty. The camp site on Lake Massapoag, in the northern part of Massachusetts, is admirably equipped for this purpose, having ample facilities for baseball, basketball, tennis, boating and swimming. The cost of the two days at camp is nominal, and most freshmen avail themselves of this opportunity for recreation prior to the beginning of the college year.

Physical Examination

All freshmen receive a thorough physical examination at the University during the orientation period. All students are expected to report promptly at the appointed time for examination. Those who fail to appear at the appointed time will be charged a special examination fee of two dollars (\$2.00).

Freshman Counselors

At the time of his matriculation each freshman is assigned to a personal counselor, a member of the faculty, who serves as an interested and friendly counselor during the perplexing period of transition from school to college. A personal record card is prepared for each student, containing certain pertinent data from his preparatory school record, the report of his physical examination at Northeastern, his scores on psychological tests, the results of placement examinations, and any special notes which may be of significance in counseling work. The aim of the freshman counseling system is primarily to assist students in making an

effective start upon their programs and secondarily to acquire for the later use of guidance officers a fund of significant information relative to every freshman. Counseling is under the direction of the Dean of Students, assisted by a clinical psychologist, who handles the diagnosis and remedial treatment of difficult problem cases.

Individual Attention to Freshmen

Not only is attention given to the scholastic problems of the student, but also to personal problems in which advice is needed and desired. The aim is to guide the student to the fullest possible personal development.

The college record of each student is carefully analyzed in the light of what could reasonably be expected of him, in view of his previous school record, his score on psychological tests, and all other factors in his situation. If he is not doing his best work, an investigation is made to determine and eliminate the causes. If he is doing as well as could be expected or better, he is encouraged to continue his efforts. In other words, each student is held to the most effective work possible, through advice, encouragement, and assistance.

Scholarships, Prizes and Awards

Trustee Scholarships

Established in 1928 by the Board of Trustees of Northeastern University. Each year the University grants in the three Day Colleges twenty-five full tuition scholarships to entering freshmen who have demonstrated throughout their preparatory or high school course superior scholastic attainment. For additional information relative to these scholarships communicate with the Director of Admissions. Applications for Trustees' Scholarships must be filed on or before April 1, 1943.

Charles Hayden Memorial Scholarships at Northeastern University

Established in 1939 through the generosity of the Charles Hayden Foundation and subject to annual renewal. The Foundation, created by the will of the late Charles Hayden, an alumnus of the Boston English High School, offers annually a sum of money to be distributed as memorial scholarships at Northeastern University. The scholarships are awarded to worthy entering students whose parents are unable to finance the entire cost of their education. To be eligible for consideration a student must have graduated from the English High School or from one of the following high schools in Boston and its metropolitan area: Arlington, Belmont, Boston (Brighton, Charlestown, Commerce, Dorchester, East Boston, English, Hyde Park, Jamaica Plain, Mechanic Arts, Public Latin, Roslindale, Roxbury Memorial, South Boston), Braintree, Brookline, Cambridge (High and Latin, Rindge Technical), Canton, Chelsea, Dedham, Everett, Lexington, Malden, Medford, Melrose, Milton, Needham, Newton, North Quincy, Quincy, Revere, Somerville, Stoneham, Wakefield, Waltham, Watertown, Wellesley, Weston, Weymouth, Winchester, Winthrop. While the scholarships are designed primarily to assist students through their freshman year in college, the Foundation has set up a supplementary loan fund to make available limited assistance to meet exigencies which may arise in the upper class years. Each recipient of a Charles Hayden Memorial Scholarship is presented a properly endorsed certificate and is eligible for membership in the Charles Hayden Scholars Club of the University. Full particulars concerning these awards may be obtained from the Director of Admissions of Northeastern University.

Dean's List Scholarships

Established in 1929. Annually at the Dean's List Dinner three scholarships of one hundred dollars each, known as the Dean's

List Scholarships, are presented to the students with the outstanding records in the sophomore, middler, and junior classes. These scholarships are applicable to the recipients' tuition the first term of the following year.

Dean's List Senior Letter

Established in 1929. At the time of the award of the Dean's List Scholarships a Dean's List Senior letter is presented to the senior student who leads the seniors in the day colleges in scholastic achievement. The letter is a congratulatory one from the President of the University and is a coveted prize.

Sears B. Condit Honor Awards

Established in 1940 through the generosity of Sears B. Condit. In the fall of the year at a University convocation Sears B. Condit Honor Awards, not less than ten in number, are awarded to outstanding students in the upper three classes of the College of Liberal Arts, the College of Business Administration, and the College of Engineering. Students who have received the Dean's List Scholarships are not eligible for one of these Honor Awards. Each award carries a stipend of not less than fifty dollars as well as a certificate of achievement.

Boston Society of Civil Engineers Scholarship in Memory of Desmond FitzGerald

Established in 1931 by the Boston Society of Civil Engineers in memory of Desmond FitzGerald, a former president of the Society and an eminent hydraulic engineer with a distinguished record of service. The scholarship is subject to annual renewal. It has been awarded annually since 1931 to an outstanding Northeastern University senior or junior student in the Department of Civil Engineering of the College of Engineering. The presentation is made by the President of the Boston Society of Civil Engineers at a College of Engineering convocation in the spring of the year.

Tau Beta Pi Award

Massachusetts Epsilon Chapter of Tau Beta Pi Association, national honorary society in engineering, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

The Sigma Society Award

Established in 1930. The Sigma Society, the honor society of the College of Business Administration, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

The Academy Award

Established in 1938. The Academy, the honor society of the College of Liberal Arts, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

Henry B. Alvord Memorial Scholarship in Civil Engineering

Established in 1940 in memory of the late Henry B. Alvord, Professor of Civil Engineering and Chairman of the Department for eighteen years. The award is made annually to a student graduating from an accredited secondary school who has demonstrated superior academic ability and gives promise of succeeding in civil engineering. The grant of two hundred and fifty dollars is made only to an entering freshman who is qualified for and plans to study civil engineering.

William J. Alcott Memorial Award

Established in 1934 by members of the faculty and other friends to perpetuate the memory of William Jefferson Alcott, Jr., a brilliant member of the Department of Mathematics in Northeastern University from 1924 until his death in 1933. The Award is offered annually in the form of a prize purchased with the income to the fund for outstanding scholastic achievement during the preceding year, either in a particular field of interest or for a superior academic record.

Public Speaking Contest

Established in 1922. Each spring the University conducts a Public Speaking Contest for which all students in the day colleges are eligible. Prizes of forty, thirty, twenty, and ten dollars respectively are awarded to the four winning speakers in a contest before the upperclass student body assembled in a general mass meeting. Speeches are original in nature and about ten minutes in length. The judges base their decision on appropriateness of subject, content, and delivery. Preliminary contests are held during the winter in each division.

Buildings and Facilities

Boston—A Great Educational Center

THE fact that Northeastern University is in Boston broadens the educational and cultural opportunities of its students.

Few other cities in the country are so rich in the finest elements of American life. Many of its historic buildings, such as the Old State House, Faneuil Hall, and the Old North Church, have become museums for the preservation of old documents, paintings, and other collections representative of early Colonial life. The Boston Public Library and the Museum of Fine Arts, both within a few blocks of the University Buildings, are widely noted for their treasures of literature and art. Even nearer to the University is Symphony Hall, home of the world-famous Boston Symphony Orchestra. And the many churches within Greater Boston not only afford the opportunity of hearing distinguished preachers but through their student clubs and young people's societies make possible for students a fine type of social and intellectual life.

University Buildings

Location

Northeastern University, except for the Law School, is housed in four buildings located on Huntington Avenue, Boston, at the end of the Huntington Avenue Subway and opposite the historic Boston Opera House. The main administrative offices of the University are located in Richards Hall, a four-story brick structure added to the physical plant of Northeastern in 1938.

The chief railroad centers of Boston are the North and South Stations. To reach the University from the North Station, board a car going to Park Street, at which junction transfer to any Huntington Avenue car. To reach the University from the South Station, board a Cambridge subway train for Park Street Under. There go up one flight of stairs and board any Huntington Avenue car.

East Building

The East Building serves as headquarters for the Colleges of Liberal Arts and Business Administration. In addition, it houses the University Library, the Business Administration Laboratory, and several department offices. Jacob P. Bates Hall is also in this building. The latter is used for University band and orchestra rehearsals, glee club rehearsals, and entertainments, as well as dramatic club work.

South Building

The South Building, located directly behind the East Building, houses the following laboratories: Time and Motion Study, Hydraulics and Sanitary Engineering, Concrete and Highway, and Electrical Measurements and Dynamo Laboratories. In addition, it provides space for department offices, classrooms, conference rooms and one large drafting room.

Richards Hall

Richards Hall is the first unit of the new Northeastern plant. Its 100,000 square feet of floor area provide ample space for administrative offices, the bookstore, Student Union reading and game rooms, Chapel, and many other facilities.

The major portion of the building is given over to laboratories and classroom areas. Laboratory space is provided for the following: Mechanical Engineering, General and Advanced Physics, Inorganic, Organic, Analytical, and Physical Chemistry, together with several special research laboratories.

Outstanding among the classroom areas are a large chemistry lecture hall and two large classrooms seating 300 and 200 students respectively. On the fourth floor are located three large, light and well-equipped drawing rooms, together with an art room for carrying on designing and drafting which form so important a part of technical work. The penthouse contains a radio laboratory, astronomy laboratory, and a blueprint room.

New Building

The New Building is the second unit of the proposed Northeastern plant. It has a basement and four stories housing laboratories, classrooms and a recreation area, the *University Commons*. Chemical engineering laboratories and classrooms take up the entire basement. The second floor contains a large lecture hall and classrooms. The Advertising Laboratory and classroom take up the entire third floor. The fourth floor is given over almost entirely to the biological laboratories and biology lecture room.

Beacon Hill Building

The building housing the Law School at 47 Mt. Vernon Street is a three-story structure completely equipped with administrative offices, faculty offices, classrooms, library and student recreational rooms. The interior of this building is both commodious and new, the entire structure having been recently remodeled by the University.

Laboratories

The laboratories of the University fall into three categories. The first group includes those for experimental work in the pure sciences of biology, chemistry, and physics. The second includes those for the study of engineering in its major branches (civil, mechanical, electrical, chemical, and industrial). The third comprises the business and statistical laboratory.

In addition to these laboratory facilities which are described in the following pages, motion pictures and lantern slides are frequently used to supplement classroom instruction. For this purpose, there are available motion picture projectors for both sound and silent film as well as several lantern slide projectors.

Biology

The Department of Biology occupies the fourth floor of the New Building, which contains in addition to the Zoological, Anatomical and Botanical Laboratories, its offices, research areas, and lecture hall. The laboratories are fully equipped for general and special work, with extensive collections of museum preparations, models, and specimen collections displaying thousands of specimens illustrating the various fields of biological study.

Chemistry

The Chemical Laboratories located on the fourth floor of Richards Hall were given to the University by the Charles Hayden Foundation. They are splendidly equipped for work in general and inorganic chemistry, qualitative and quantitative analysis, and organic and physical chemistry. In addition several service rooms and space for a limited amount of research are provided.

General Chemistry and Qualitative Analysis

This laboratory is fully equipped with water, gas, electricity, steam, and fume hoods. A hydrogen-sulphide room, a balance room, and a conference room are also a part of this unit.

Organic Chemistry

This laboratory provides about six feet of working space for each student. The facilities are similar to those in the general chemistry laboratory, and in addition, there is provided a large evaporating unit and an organic combustion furnace.

Quantitative Analysis and Physical Chemistry

The tables and fume hoods and other equipment in this room are similar to those in the Organic Laboratory. In addition, a

large drying oven, special balances, electrical instruments, temperature measuring devices, and other specialized apparatus are provided.

A small laboratory for technical analysis of such materials as coal, vegetable oils, petroleum, textiles, and rubber adjoins the main laboratory, and a special laboratory is also available for electrolytic work.

Research

Three small laboratories are equipped for advanced research. These are available for graduate thesis investigations.

Physics

The Physics Laboratories located on the second floor of Richards Hall are fully equipped for elementary and advanced study as well as research. In addition an astronomy laboratory and a radio laboratory are located in the penthouse on Richards Hall.

General

This laboratory, designed for elementary instruction, is provided with gas, water, and electricity. A spectrometer room, a photographic room, and a photometer room are directly connected with this laboratory. Sufficient apparatus is available so that ordinarily students may work alone on most experiments.

A second smaller laboratory is equipped for more specialized experiments, and has facilities for glass blowing and high vacuum work. A flexible electrical system here permits use of all the supplies available to the Advanced Laboratory.

Advanced

This laboratory is designed with a view to both precision and flexibility. A special switchboard provides single phase and polyphase alternating current and a variety of direct current potentials. A workshop with lathe, drill press, grinder, and other tools as well as two separate research rooms complement the laboratory. A large number of special instruments plus considerable auxiliary apparatus gives a well rounded supply of equipment for advanced study and research.

Astronomy and Radio

The astronomy laboratory is provided with equipment for grinding mirrors and constructing telescopes, and a platform on the roof provides a very good unobstructed view for making observations.

The radio laboratory is a completely shielded room and houses the amateur transmitting station which operates on both radio-telephone and radiotelegraph. Facilities are also available for research.

Psychology

The Psychology Laboratory, located on the third floor of Richards Hall, is equipped for the observation of reacting human beings under controlled conditions. Equipment consists of instruments for measuring and controlling factors involved in perception, memory, and learning, and of psychometric devices for the testing and evaluation of individual abilities.

Civil Engineering

Most of the laboratory work in civil engineering is, of course, actual field work in surveying. A considerable amount of demonstration equipment and models are available for use in the study of structures, hydraulics, sanitary engineering, highways, concrete and soil mechanics.

Field Work

The Department of Civil Engineering is provided with a variety of excellent and up to date equipment for field work. The instruments have been chosen to make possible the working out of advanced as well as elementary field problems, and to acquaint the students with the principal makes and types of instruments in general use.

Hydraulics and Sanitary Engineering

This laboratory located on the first floor of the South Building is equipped with demonstration measuring devices for use in connection with the courses in hydraulics.

Complete equipment is also provided for water and sewage analysis, and research students can be accommodated in this field.

Concrete and Highway Engineering

Located on the second floor of the South Building, this laboratory is equipped for conducting all the routine tests on cement and aggregate. The 300,000 lb. Riehle testing machine in the Mechanical Engineering Department is available for compression tests on concrete cylinders.

Equipment is also available for conducting a major portion of the accepted tests on bituminous materials as used in highway work. Soil Mechanics equipment consists of a general soil sampler, consolidometer, wet-mechanical gram-size analysis and a quicksand demonstration tank.

Mechanical Engineering

The Mechanical Engineering Department has a suite of well equipped laboratories containing a large variety of modern

machines and occupying over 10,000 square feet of floor space in the basement of Richards Hall. Special areas have been set aside and equipped for oil testing, concrete mixing, mechanics research, and similar purposes. Auxiliary equipment is, of course, available for making all the usual tests and measurements.

Steam Power

This equipment includes a wide variety of steam engines, turbines, pumps, heat exchangers, and measuring instruments.

The auxiliary steam power plant operated by the University and the Boston Y.M.C.A. is also used for testing purposes. This plant consists of four horizontal return tubular boilers, two burning coal and two burning fuel oil. These feed three reciprocating steam engines and one turbine which in turn drive four direct current generators.

Internal Combustion and Aeronautics

The internal combustion equipment includes a number of gas and oil, automobile, airplane, and Diesel engines. Most of these are set up for running experimental tests, but several are available for dismantling and demonstration purposes.

In addition to the study of airplane engines, the laboratory is equipped with a small wind tunnel for experimental work in aerodynamics.

Refrigeration, Heating, and Air Conditioning

Included under this heading are an ammonia refrigerating machine, a constant temperature room equipped for either heating or cooling, and a large air conditioner unit.

Testing Materials and Heat Treatment

For tension, compression, bending, and shearing tests, the laboratory is equipped with a 300,000 lb. capacity Riehle and a 50,000 lb. capacity Olsen, as well as several smaller testing machines. For other tests the laboratory has cement testers, torsional testing machines, impact testers, fatigue testers, hardness testers, extensometers, oil testing equipment calorimeters, as well as instruments for measuring speed, vibration, temperatures, pressures and flow of fluids.

For heat treatment studies an electric furnace and a gas fired furnace are available. Equipment magnifying up to 2600 diameters is available for photographing crystalline structures, and the laboratory has polaroid equipment for photoelastic stress analysis.

Machine Shop

Adjoining the laboratory is a machine shop fully equipped with machine tools, welding equipment, and a small forge.

Electrical Engineering

The basement of the South Building is occupied by the electrical laboratories. These cover an area of approximately 7,800 square feet and include the dynamo, measurements, high tension, electronics and communication laboratories.

Dynamo

This laboratory is provided with both 60 cycle 3 phase 230 volt alternating current and 115-230 volt three-wire direct current. The equipment includes more than sixty motors and generators of different types together with the necessary auxiliary equipment to operate and test them. The motors and generators have been selected so as to reduce as much as possible the risk from high voltage while making available to the students a representative range of commercial apparatus.

Electrical Measurements

The equipment here is of two distinct types: first, that planned primarily for teaching principles of measurement, and secondly, that which is used in teaching advanced standardizing methods as well as for calibrating instruments in other laboratories of the University. Briefly, this laboratory is equipped for practically any work in electrical measurements except for the absolute determinations carried on in national standardizing laboratories.

High Tension

This laboratory is equipped with the necessary transformers and auxiliary equipment to provide 4 Kva. at 50,000 volts potential. A special room has been equipped for cable and insulation testing, and impulse testing of insulation is made possible by a surge generator capable of producing waves having crest values up to 300,000 volts. A 4,000 ampere low voltage transformer is also available for the study of the effects of heavy currents in conductors, switches, and contacts.

Electronics and Communications

This laboratory is equipped with apparatus for about forty odd experiments in the field of Electronics, Networks, Radio Engineering and Ultra High Frequency Technique. The laboratory facilities are designed to cover all the experiments outlined in the second M. I. T. Conference on Ultra-High-Frequency Technique.

Chemical Engineering

The Department is now located in the ground floor of the New Building. A total of 8,218 square feet has been allotted for its exclusive use.

Unit Operations Laboratory

This laboratory is primarily devoted to the study of flow of fluids, filtration, heat transfer, distillation, evaporation, absorption, and drying; but houses in addition equipment for carrying out such unit processes as nitration, reduction, fusion, and sulphonation.

Approximately 1,000 square feet of this laboratory consists of a double floor area serviced by a traveling crane for installing and repairing semi-plant scale equipment.

Crushing, Grinding and Separation Laboratory

A separate laboratory equipped with a ventilating fan houses equipment for crushing, pulverizing, and separating solids. All equipment is operated by individual electric motors with speed control frequently taken advantage of to get experimental data.

Machine Shop

A small, well equipped shop is available for the construction and repair of equipment.

Research Space

In addition to the Research Laboratory, the mezzanine floor of the Unit Operations Laboratory is available for investigating new processes.

Industrial Chemical Laboratory

This laboratory is equipped with modern laboratory benches and is located next to the stock room. The determination of the optimum conditions for carrying out unit processes on a small scale is accomplished in this laboratory.

Industrial Engineering

Students in the Department of Industrial Engineering share in the use of the Mechanical Engineering Laboratories and the Business Laboratory. The Industrial Engineering Laboratory itself is located on the first floor of the South Building and is devoted exclusively to methods engineering (motion and time study work).

Methods Engineering

This laboratory is completely equipped with the latest facilities and tools used by methods engineers. Besides the general equipment consisting of benches, tables, lathe, jigs, fixtures, and racks, the laboratory has an ample supply of time study boards, stop watches and timers for time study work. There is also available complete motion picture equipment and microchronometers for micromotion work.

Design and Drafting Rooms

The University possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with lockers containing the drawing supplies, files containing blue prints, and photographs of machines and structures that represent the best practice. Drafting room blackboards are equipped with traveling straight edge devices which facilitate speed and accuracy in blackboard demonstrations.

Libraries

The new library is located on the first floor of the East Building. The reading room seats about 300 students at one time, and the stack capacity approximates 25,000 volumes. Here are available all of the general reference books, most of the professional and scientific volumes, and most of the periodicals to which the University subscribes.

Library hours are as follows:

8:45 A.M. to 10:00 P.M. Mondays through Fridays

8:45 A.M. to 5:00 P.M. Saturdays

Closed on Sundays and Holidays

The library is under the direction of a librarian and three assistants all of whom have had special training for the work.

A general reading room and library is maintained by the Northeastern Student Union in Room 356, Richards Hall. The books located here are chiefly non-technical works dealing with contemporary affairs, religious problems, international relations, travel, etc., among which students may browse during periods of relaxation. A few of the literary and religious periodicals are also available in this room.

Boston Public Library

All members of the University, whether resident or non-resident students, have the privilege of taking books from the Boston Public Library and of using the library for general reference and study. Inasmuch as this is one of the best in the country, it presents unusual opportunities to the students. Within a few minutes' walk from the University, it enables students to have unlimited reference at any time to books and periodicals bearing upon their studies.

Lecture Assembly Halls

Through special arrangement, Jordan Hall, Symphony Hall, and the Boston Opera House are made available for assembly purposes. These halls provide ample space for student activity assemblies and for special lectures by noted men. All the students in college at any period assemble for one hour each week throughout the college year. More than half of the assembly sessions are devoted to interests and activities developed by the students themselves. The other assembly periods are devoted to special lectures, sometimes under the direction of the student body and sometimes under the direction of the faculty. The special lectures are devoted to those elements of life which count most in the development of a man's viewpoint and his character.

Equipment for Physical Training

Northeastern has exceptional facilities for all-round physical training. The gymnasium is one of the most complete in New England. Adjoining Richards Hall is a large field equipped for athletics. Here are two tennis courts, an outdoor gymnasium, a rifle range, a baseball cage, jumping pits, and a track with a 100-yard straightaway.

Natatorium and Gymnasium

The Natatorium is located in the East Building between the assembly hall and gymnasium. It is 75 feet long and 25 feet wide and is generally regarded as one of the finest of its kind in this area.

The Gymnasium is known as the Samuel Johnson Memorial Gymnasium and provides the following facilities: three gymnasiums, a twelve-lap running track, two large exercise rooms, boxing and wrestling rooms, handball and squash courts, bowling alleys, showers, steam baths, massage rooms, electric cabinet baths, and locker rooms.

Huntington Field

Huntington Field, the University athletic field, is located on Kent Street in Brookline and provides ample facilities for track, baseball, football and other outdoor sports. The University maintains bus service between its Huntington Avenue plant and the Huntington Field making it possible for students to get back and forth with a minimum loss of time. The field is equipped with a commodious field house as well as ten sections of stadium seats for spectators.

Student Activities

NORTHEASTERN University regards student activities as an integral part of its educational program. One of the main departments of the University is charged with the responsibility of co-ordinating the various types of activities and of administering the social, musical, literary, and athletic organizations in such a way as to enable each to contribute in a wholesome, worth while manner to student life at Northeastern. Every student is encouraged to participate in such activities as may appeal to him, although a standard of scholarship which is incompatible with excessive devotion to such pursuits is required of all students.

Members of the faculty also are interested in the informal aspects of the college program. Teaching loads are kept sufficiently low so that the instructional staff may have ample opportunity to mingle with students outside of the classroom in social activities and on the athletic field. In fact, some member of the faculty is appointed to serve as adviser for each student activity. His function is not to dictate how the organization shall be run, but to encourage the students in their extra-curricula endeavors and to give them the benefit of his mature point of view in solving the problems that inevitably arise.

One of the outstanding contributions of the co-operative plan in the field of higher education has been its capacity to develop in students those powers of social understanding that are so essential to success in professional life. At Northeastern the program of student activities is made to contribute to this end in a very real way. It is a conscious aim of the student activities advisers to develop among their advisees those qualities of personality and character which will enhance their usefulness as future professional men and citizens. Students have splendid opportunities to develop administrative and executive ability as leaders of undergraduate organizations. No academic credit is awarded for any student activity. This has been no deterrent, however, to student participation in extra-curricula activities, for a recent survey of the undergraduate body showed that over 90% of the enrollment were engaged in one or more forms of student activity.

Student Council

Student government of the Day Colleges at Northeastern University is vested in the Student Council, composed of elected representatives from the various classes. The Council is the authority on all matters relating to student policies not definitely connected with classroom procedure. It has jurisdiction, subject

to faculty approval, over all such matters as customs, privileges, and campus regulations. The Dean of Students serves as faculty adviser to the Student Council.

Northeastern Student Union

The purpose of the Northeastern Student Union is to carry out the work of a Christian association within the University. It endeavors to deepen the spiritual lives of Northeastern men through the building of Christian character, to create and promote a strong and effective Northeastern University spirit in and through a unified student body, to promote sociability, and to emphasize certain ethical, social, civic, intellectual, economic, physical, vocational, and avocational values.

All students are encouraged to participate in the activities of the Union, no matter what their religious faith, as the work of the Union is entirely non-sectarian. A good moral character is the only requirement for eligibility to membership. It is hoped that as many students as can will participate in this ideal extra-curricula work.

The Union conducts a weekly Chapel Service in the little chapel in Richards Hall, to which all faculty members and students are invited. The service, which is non-sectarian and voluntary, is held on Thursday mornings from 8:40 to 8:55 o'clock. Many eminent preachers of Greater Boston are engaged to deliver brief addresses.

Athletic Association

All students in the Day Colleges are members of the Northeastern University Athletic Association. Policies of the association are passed upon by a Faculty Committee on Student Activities. This committee decides what students are eligible to participate in athletics, what the various sports schedules shall be, and what students may be excused from classes to represent the University on athletic trips.

The actual administration of the athletic program is in the hands of a second committee, known as the General Athletic Committee, which consists of the Director of Student Activities, the captains and managers of all varsity teams, and the coaches as ex officio members.

The University maintains both varsity and freshman teams in baseball, basketball, cross-country, football, hockey, and track. Intercollegiate games and meets are arranged with the leading colleges in the East. In addition to intercollegiate athletics the athletic association conducts an intramural program in various sports.

Publications

"The News"

A college newspaper, the *Northeastern News*, is published each week throughout the college year by a staff selected from the student body. The copy is prepared, edited, and published by the students themselves with the counsel of a faculty adviser. Opportunity is afforded for the students to express their opinions on subjects relating to study, co-operative work, social events, or topics of the day. Positions on the *News* staff and promotions are attained by competitive work. The paper is in part supported by advertising, both national and local, and in part by a portion of the student activities fee. The *Northeastern News* is a member of the Eastern Intercollegiate Newspaper Association, and sends one of its editors to the annual convention of this association each year. Copies of the *News* are mailed to upperclassmen when they are at co-operative work and to freshmen after the close of their college year.

"The Cauldron"

The combined senior class publishes annually a college year book, *The Cauldron*. It is ready for distribution in the latter part of the second semester and contains a complete review of the college year with class histories, pictures of all seniors, of the faculty, and of undergraduate groups, as well as a miscellany of snapshots and drawings contributed by students.

Honor Societies

Three honorary societies are chartered by the University in its Day Colleges:

Tau Beta Pi, in the College of Engineering.

The Sigma Society, in the College of Business Administration.

The Academy, in the College of Liberal Arts.

Election to the college honorary societies is founded primarily upon scholarship, but before a man is privileged to wear the honorary society insignia he must give evidence of an integrity of character and an interest in the extra-curricula life of the University as well as an acceptable personality. The Societies have memberships consisting of the outstanding men in the Day Colleges. Election to the honorary society is the highest honor that can be conferred upon an undergraduate.

Professional Societies and Clubs

To assist in the promotion of social, cultural, and intellectual advancement through informal channels, a number of professional societies and clubs are sponsored.

National Engineering Societies

Students in the several professional curricula of the College of Engineering operate Northeastern University Sections of the appropriate national professional societies. Chief among these are the following:

- American Society of Civil Engineers
- Boston Society of Civil Engineers
- American Society of Mechanical Engineers
- American Institute of Electrical Engineers
- American Institute of Chemical Engineers
- Society for the Advancement of Management
- American Chemical Society

Members of the engineering faculty who hold membership in the parent organizations serve as advisers to these student groups. Meetings are held regularly, usually at night so that students from both divisions may attend, and practicing engineers are invited to address the sections. Occasionally appropriate motion pictures are shown, or the group visits some current engineering project in the vicinity of Boston. The College of Engineering encourages these student sections of the technical societies in the belief that they provide a wholesome medium for social intercourse as well as a worth while introduction to professional life.

Membership in the student sections of the American Society of Civil Engineers and Boston Society of Civil Engineers, the American Society of Mechanical Engineers, or the American Institute of Electrical Engineers also includes membership and privileges of the Engineering Societies of New England. This organization is an affiliation of all the major technical societies of Boston and vicinity and provides valuable lectures, smokers, and informal meetings with the outstanding men engaged in engineering work in Boston and vicinity.

Astronomy Club

Membership in the Astronomy Club is open to all students in the College of Engineering who maintain satisfactory scholastic standing. The club has access to machine shops for the construction of telescopes and other instruments. It also has quarters in the penthouse on the fifth floor of Richards Hall. Meetings are held twice a month for the purpose of making astronomical observations and carrying on appropriate discussions.

Banking and Finance Club

The purpose of this organization is to increase among its members the knowledge of the theory and practice of banking. Any student of Northeastern University, while enrolled in any of the banking courses of the College of Business Administration, is

eligible to active membership in this club. Meetings are held each ten week period at which banking executives from Greater Boston are invited to discuss current issues in the field.

Camera Club

The Camera Club welcomes all men interested in photography. Weekly discussions and special evening lectures by guest artists are part of the yearly program. Field trips, monthly photo contests and a general exhibition add to the interest and progressive work of this organization.

Chess Club

The Chess Club gives both beginners and experts an opportunity to enjoy the game. Yearly tournaments are held among the members and, in past years, the best men have engaged in inter-collegiate competition.

Combined Musical and Dramatic Clubs

The Department of Student Activities sponsors musical clubs, such as the following: a concert orchestra, a band, a glee club, a banjo club, and a dance orchestra, for which all students with musical ability are eligible. Membership in the various musical clubs is attained by competitive effort.

Each organization has a faculty adviser and each elects a representative to the Musical Clubs Council. The purpose of this council is to co-ordinate the various musical activities of the Day Colleges. At the annual Musical Clubs Banquet, held early in the spring, charms are awarded to the leaders and managers of the several clubs and to members who have played over a period of three full years.

The various musical clubs, in conjunction with the Dramatic Club, combine in an annual mid-winter entertainment and participate in occasional outside public engagements throughout the college year.

Students interested in dramatics have an opportunity to cultivate this art under faculty coaches who co-operate with the Dramatic Club in the production of several pieces in the course of each college year.

Debating Society

The purpose of the Debating Society, formed in 1936, is "to foster and promote an interest and facility in formal argumentation; to develop an impartial, unbiased, and intellectual consideration of questions and issues of current interest; and to sponsor intercollegiate relationships and competition in the debating field." Membership is open to all students of the Day Colleges.

German Language Club

Students are given an opportunity in this club to use their knowledge of German in ways that give them entertainment as well as a greater appreciation of foreign customs and literature.

International Relations Club

The International Relations Club was founded in 1932 for the purpose of studying and discussing those current national and international events and issues which vitally concern our American life and institutions.

It is the intention of the club to deal with all questions in an impartial and broadminded manner, and to take an intelligent and effective part in promoting international understanding and harmony. The club maintains contacts with similar organizations in other colleges.

Membership is not open to freshmen, and only to those upperclassmen who maintain good scholarship.

Law and Accounting Club

All students interested in accounting and law are invited to join this stimulating club. Problems and cases involving the interrelations of accounting and law are presented and discussed at club meetings. Although upperclassmen usually present problems arising out of thesis or co-operative work, speakers from the professional world come to the meetings to present papers and lead the student discussion.

Mathematics Society

The Mathematics Society encourages the study of topics of mathematical interest which are either outside or beyond the scope of the regular mathematics courses. Membership is restricted to those men who have completed one and one-half years of study in mathematics and have an average grade of not less than "C" in mathematics courses up through differential calculus. The club meets once every five weeks in the evening. Although membership is limited to upperclassmen, any student is always welcome to any meeting, and freshmen especially interested in mathematics are always welcome.

The final program of the year is devoted to a dinner meeting for which some prominent outside speaker is procured.

Radio Club (Suspended for the duration of the war.)

One of the most popular undergraduate activities is the Radio Club. Members are provided opportunity for code practice and are encouraged to obtain their amateur licenses. The club owns and operates station W1KBN, a short wave transmitter, located in the Radio Laboratory in the penthouse of Richards Hall.

Meetings are held about once a month for the discussion of technical matters. Practicing radio engineers are frequently invited to address the club at evening meetings, when students in both divisions may attend.

Rifle Club

Organized a number of years ago, the Rifle Club was so successful that in 1933 riflery was recognized as a minor sport. Members of the club are given instruction in the art of rifle shooting. Those students who excel in intra-mural competition are selected for the team representing the University in intercollegiate contests. Practice sessions are held twice a week in the University rifle range. Membership is open to all students. Northeastern is a member of the New England Intercollegiate Rifle League and the National Rifle Association.

Yacht Club

Only recently formed, the Yacht Club is a member of the Intercollegiate Yacht Racing Association. The club participates in regattas held in the Charles River Basin and also in regattas held at other colleges.

Class Organization and Activity

Each of the classes in the Day Colleges elects its officers and carries on activities as a class. Dances are sponsored by the classes at regular periods throughout the year. One of the high lights of the social program is the Junior Promenade, held each spring at one of the Boston hotels.

Seniors plan a number of activities just prior to Commencement.

Freshmen are required to wear the red and black cap distributed through the Department of Student Activities in order that they may be readily distinguishable to each other and to upperclassmen. (This requirement suspended for the duration of the war.)

Convocations

The hour from 12:00 to 1:00 on Wednesdays throughout the year is set aside for convocations. Attendance is compulsory. Arrangements are made to bring before the student body some of the ablest and foremost thinkers of the day. A list of speakers for the year will be found on page 19 of this catalogue. When the convocation hour is not occupied by a University lecturer, class meetings, concerts, or athletic rallies are held instead. Such gatherings are under the direction of the Department of Student Activities.

Fraternities

There are at present ten local Greek letter fraternities chartered by Northeastern University. Each fraternity is provided with a faculty adviser who is responsible for the proper administration of the fraternity house under the rules and regulations established by the faculty. The list of fraternities in the order of their establishment is as follows:

- | | |
|-----------------------|--------------------|
| 1. Beta Gamma Epsilon | 5. Phi Beta Alpha |
| 2. Alpha Kappa Sigma | 6. Phi Gamma Pi |
| 3. Nu Epsilon Zeta | 7. Sigma Phi Alpha |
| 4. Sigma Kappa Psi | 8. Kappa Zeta Phi |
| 9. Gamma Phi Kappa | |

Elected representatives from each fraternity make up an Inter-Fraternity Council, a body which has preliminary jurisdiction over fraternity regulations. Its rulings are subject to the approval of the Faculty Committee on Student Activities.

The Alumni Association

The alumni of the Day Colleges are organized to promote the welfare of Northeastern University, to establish a mutually beneficial relationship between the University and its alumni, and to perpetuate the spirit of fellowship among members of the Alumni Association.

The work of the General Alumni Association is supplemented by the activities of regional alumni clubs located throughout the east and middle west. The local clubs meet periodically in their respective centers to discuss matters pertaining to the University and its alumni. Meetings are also held in conjunction with the visits of Northeastern's athletic teams to the various club centers.

Officers of the Alumni Association

President

GEORGE A. MALLION '20

Secretary

SUMNER B. BRUNS '35

Vice President

JAMES W. DANIELS '25

Treasurer

JOHN E. VADALA '31

Executive Committee

HAROLD L. BURTON '29

RAYMOND W. JAMES '32

CARL M. WEAVER '34

EDWARD V. KIRKLAND '35

WALLACE E. MACQUARRIE '40

RUDOLPH A. LOFGREN '27

Alumni Executive Secretary

RUDOLF O. OBERG '26

Alumni Faculty Representative

WARREN L. GANONG '37

Alumni Council Representatives

1913-1920—

BERNARD H. CAPEN '20

JAMES A. KNOWLTON '19

PERRY F. ZWISLER '17

1921—ROGER E. SPEAR

1922—LAURENCE S. FAUNCE

1923—EDWARD J. PERRY

1924—H. RAYMOND BENSON

1925—RENE G. MAURETTE

1926—CHARLES M. MCCOOMBE

1927—WILLIAM J. URQUHART

1928—HOWARD F. KNOWLES

1929—JAMES H. KINGHORN

1930—HARRY C. STEDT

1931—THOMAS E. RUSHFORTH

1932—ALBERT E. JOHNSON

1934—HORACE S. MILES

1935—WARNER M. ABBOTT

1936—WILLIAM E. DINGWELL

1937—LESLIE W. LENFEST

1938—GEORGE C. LECK

1939—WILLIAM E. FEIDT

1940—ALBERT S. MAKAS

1941—DAVID C. GERRY

1942—WILLIAM W. ROBINSON

THE COLLEGE OF ENGINEERING

Aims and Methods

ENGINEERING has been defined as the art of applying the resources of material and power in nature to the use and convenience of man. The design and construction of bridges, power plants, water works, skyscrapers, industrial plants, machinery, transportation systems, and communications systems thus clearly fall within the scope of engineering. And as scientific research has advanced into new areas, the task of putting these discoveries to practical use has also fallen to the engineer.

Because an engineering education teaches young men to search out the truth, to think clearly, and to formulate conclusions based upon a solid foundation of facts, engineers are being called more and more to occupy positions of responsibility in the management of our great industrial enterprises. Even in such diverse fields as banking, public health, and public administration, this so-called engineering approach is in demand.

In consequence of this extremely wide field of endeavor open to engineers, the problem of providing a technical training adequate to cope with the design and construction of buildings, machinery, and equipment, and at the same time a training broad enough to develop a well-rounded personality and a sense of social responsibility, is by no means simple of solution. Northeastern University seeks by means of its educational program, first of all to develop men of well-rounded personality capable of meeting and discharging their responsibilities as future citizens and leaders in their own communities. At the same time, the courses of study prescribed for students in the College of Engineering are designed to develop engineers technically competent to undertake professional responsibilities in their chosen fields of endeavor.

To this end, the College of Engineering offers separate curricula in five major branches of engineering: namely, civil, mechanical, electrical, chemical, and industrial. Since a basic training in science and mathematics is essential to all fields of engineering, the first year's curriculum is identical for all engineering students, and a student may change his field of specialization at the end of the first year without loss of time. Throughout his entire college career, the student is required to take a number of courses of a cultural nature designed to broaden his point of view and to help develop a well-balanced outlook. Individual laboratory instruction in addition to classroom work is employed as far as possible, and the co-operative plan of education, enabling the students to obtain a first-hand acquaintance with actual industrial and engineering operations, goes a long way toward bridging the gap between "theory" and "practice".

Admission Requirements

APPPLICANTS for admission to the freshman class must qualify by one of the following methods:

1. Graduation from an approved course of study in an accredited secondary school, including prescribed subjects listed below.

2. Completion of fifteen acceptable secondary school units with a degree of proficiency satisfactory to the Department of Admissions.

3. Examinations.

Certificate of entrance examinations passed for admission to recognized colleges and technical schools may be accepted.

Prescribed Subjects for Admission

College of Engineering

Algebra (quadratics and beyond)	2 units
Plane Geometry	1 unit
*Physics or Chemistry	1 unit
History, Social Studies and/or Foreign Language	2 units
English (4 years)	3 units
**Electives	6 units
	<hr/>
Total	15 units

A unit is a credit given to an acceptable secondary school course which meets at least four times a week for periods of not less than forty minutes each throughout the school year.

Entrance examinations are not required of students whose transcripts of record are acceptable, but the Committee on Admission reserves the right to require a candidate to present himself for examination in any subjects that it may deem necessary because of some weakness in his secondary school record.

Other Requirements

These formal requirements are necessary and desirable in that they tend to provide all entering students with a common ground upon which the first year of the college curriculum can be based. But academic credits alone are not an adequate indication of a student's ability to profit by a college education. Consequently the Department of Admissions takes into consideration, along

*Physics is recommended.

**Not less than four of the "electives" must be in one or more of the following academic branches: Languages, Natural Science, Mathematics, Social Sciences, History.

with the formal requirements stated on page 65, many other factors regarding candidates for the freshman class. A student's interests and aptitudes in so far as they can be determined, his capacity for hard work, his attitude toward his classmates and teachers in high school, his physical stamina, and, most important of all, his character,— all these considerations are carefully weighed. In this way the University seeks to select for its student body those who not only meet the academic admission requirements but who also give promise of acquitting themselves creditably in the rigorous program of training afforded by the co-operative plan and of later becoming useful members of society.

Personal Interview

Candidates for admission should communicate with the Director of Admissions, who will advise them frankly on the basis of past experience. A personal interview is always preferred to correspondence, and parents are urged to accompany their sons or daughters whenever this is possible. Effective guidance depends in large measure upon a complete knowledge of a candidate's background and problems. Parents invariably are able to contribute much information that aids the admissions officer in arriving at a decision. In general, a student is likely to be more successful in his college work if he does not enroll under the age of seventeen.

Candidates are urged to visit the Office of Admissions for personal interview if it is possible for them to do so before submitting their applications. Office hours of the Department are from 9:00 A.M. to 4:00 P.M. daily; Saturdays to 12:00 M. The Director of Admissions will interview applicants on Wednesday evenings but by appointment only.

Application for Admission

Each applicant for admission is required to fill out an application blank whereon he states his previous education as well as the names of persons to whom reference may be made in regard to his character and previous training.

An application fee of five dollars (\$5.00) is required when the application is filed. This fee is non-returnable.

The last page of this catalogue is in the form of an application blank. It should be filled out in ink and forwarded with the required five dollar fee to Director of Admissions, Northeastern University, Boston, Mass. Checks should be made out to Northeastern University.

Upon receipt of the application, properly filled out, the College at once looks up the applicant's references and secondary school records. When replies have been received to the various inquiries, the applicant is informed as to his eligibility for admission.

Applications should be filed not later than April 15, thus allowing ample time for the investigation of the applicant's secondary school records before he enrolls in the College.

The University reserves the right to place any entering student upon a period of trial. Whether he shall be removed from trial at the end of this time or requested to withdraw will be determined by the character of the work he has accomplished and his conduct during this trial period.

Registration

Eligibility for admission does not constitute registration, Freshmen register at the University on May 3, 1943, or July 12, 1943. No student is considered to have met the requirements for admission until he has successfully passed the required physical examination.

Advanced Standing

Students transferring from approved colleges will be admitted to advanced standing provided their records warrant it. Whenever a student enters with advanced standing and later proves to have had inadequate preparation in any of his pre-requisite subjects, the faculty reserves the right to require the student to make up such deficiencies.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their initial inquiry. Students admitted to advanced standing are not eligible for placement at co-operative work until they have completed a full year of academic work at the University.

Entrance Examinations

Students who are deficient in required units for admission may remove these deficiencies by examination. Such examinations are held at the University unless special arrangements are made with the Department of Admissions to administer them elsewhere.

Students are advised to take such examinations on the earliest possible date in order that any deficiencies which they fail to clear may be made up in time to permit registration with the desired class and division.

The time of examinations is as follows:

10:00 A.M. to 12:00 M.
1:00 P.M. to 3:00 P.M.

During the current year examinations will be given in April and June. All other examinations will be given by special assingment.

Graduation Requirements

THE College of Engineering offers five-year curricula, conducted on the co-operative plan, leading to the following degrees:

- I. Bachelor of Science in Civil Engineering
- II. Bachelor of Science in Mechanical Engineering*
- III. Bachelor of Science in Electrical Engineering
- IV. Bachelor of Science in Chemical Engineering
- V. Bachelor of Science in Industrial Engineering

These curricula are described in the following pages. Since the first year is the same for all engineering students, final choice of curriculum need not be made until the beginning of the second year.

Candidates for the Bachelor of Science degree must complete all of the prescribed work of the curriculum in which they seek to qualify, together with ten additional semester hours of credit in co-operative work. This makes a minimum of 147 semester hours required for the degree. Students who undertake co-operative work assignments must meet the requirements of the Department of Co-operative Work before they become eligible for their degrees.

No student transferring from another college or university is eligible to receive the S.B. degree until he has completed at least one academic year at Northeastern immediately preceding his graduation.

Any student who fails to show a satisfactory standard of general efficiency in his professional field may be required to demonstrate his qualifications for the degree by taking such additional work as the faculty may prescribe. If he is clearly unable to meet the accepted standard of attainment, he may be required to withdraw from the University.

Graduation With Honor

Candidates who have achieved distinctly superior attainment in their academic work will be graduated with honor. Upon special vote of the faculty a limited number of this group may be graduated with high honor or with highest honor. Students must have been in attendance at the University at least three years before they may become eligible for honors at graduation.

*Includes option in Aeronautical Engineering.

Thesis Option

Theses are not required of candidates for the degree of Bachelor of Science. Students who show special aptitude for thesis work, however, may be permitted to substitute an appropriate thesis for equivalent work in class. The nature of thesis work is described on page 122.

Engineering Curricula

1. Civil Engineering

THE field of civil engineering has to do with the planning and building of all kinds of structures and public works. None of the structures of civil engineers lend themselves to quantity production in a factory. Not only are civil engineering works designed to fit a single location, but ordinarily their value is dependent upon their ability to resist forces tending to move them.

Civil engineering is as old as civilization itself, and until recent times, it embraced all phases of engineering except those of a military character. Today its major branches include topographical, municipal, railroad, highway, structural, hydraulic, and sanitary engineering. It covers land surveying, the building of railroads, soil mechanics, harbors, docks, and similar structures, the construction of sewers, waterworks, streets, and highways, the design and construction of flood control projects, bridges, buildings, walls, foundations, and all fixed structures.

Because civil engineering covers such a broad field, it is not possible to become expert in all its branches. All of these, however, rest upon a relatively compact body of principles, and broadly speaking, it may be said that the civil engineer deals largely with accurate descriptions of locations (surveys) and with applications of the mechanics of resistance to motion (statics).

Since the first step in every civil engineering project involves accurate measurement of the surface features of the land, of the nature of the soil, and of the character of the underlying rock, the study of surveying and related subjects occupies a large place in the civil engineering curriculum. And since the primary consideration in designing any structure is to make certain that it will withstand safely any forces to which it may be subjected, the mechanics of static bodies, strength of materials, and theory of structures are studied in detail. The curriculum is thus intended to prepare the young civil engineer to take up the work of design and construction of structures, to solve the problems of water supply and waste disposal in urban areas, and to undertake intelligently the supervision of work in allied fields of engineering and in general contracting.

Upon graduation, the young engineer may expect a period of apprenticeship either in the field, surveying and plotting, or in the office, over the drafting board. As he gains experience, however, he will likely find himself entrusted with greater responsibilities in actual design and supervision of construction. If he prefers a roving existence, his ambition should be directed toward private fields; if a stable home and community life is more appealing, opportunity is probably greater in the public service of the Federal Government and the various states and municipalities.

I. Civil Engineering

FIRST TERM			SECOND TERM		
Course No.	Course	Semester Hours	Course No.	Course	Semester Hours
<i>First Year</i>					
Ch 1	General Chemistry	4	Ch 2	General Chemistry	4
D 1	Eng. Drawing	3	D 2	Descriptive Geometry . .	3
E 1	English I	3	E 2	English I	3
M 1	Algebra	3			
M 3	Trigonometry	2	M 4	Analytic Geometry	5
P 1	Physics I	3	P 2	Physics I	3
PE 1	Hygiene	1		Orientation	0
	Physical Training	0		Physical Training	0
		19			18
<i>Second Year</i>					
CI 3	Surveying I	1½	CI 4	Surveying II	2½
CI 5	Surveying I, F & P	1	CI 6	Surveying II, F & P	1
M 5	Differential Calculus	3	M 6	Integral Calculus	3
P 3	Physics II	2	P 4	Physics II	2
P 5	Physics Laboratory	1	P 6	Physics Laboratory	1
EL 5	Electrical Machinery	4	ME 20	Applied Mechanics	3
		12½			12½
<i>Third Year</i>					
CI 7	Surveying III	2	CI 8	Surveying IV	2
CI 9	Surveying III, F & P	1	CI 10	Surveying IV, F & P	1
CI 11	Hydraulics	2½	CI 12	Hydraulics	2
Ec 21	Economics	2	Ec 22	Economics	2
ME 21	Applied Mechanics	3	ME 22	Strength of Materials	3
ME 35	Heat Engineering	2	ME 36	Heat Engineering	2½
		12½			12½
<i>Fourth Year</i>					
CI 15	Theory of Structures	3	CI 16	Theory of Structures	3
CI 21	Sanitary Engineering	2	CI 22	Sanitary Engineering	2
Gy 1	Geology	2	Gy 2	Geology	2
ME 23	Strength of Materials	2	ME 24	Advanced Mechanics	2
ME 69	Testing Materials Lab	1½	CI 18	Concrete Testing Lab	1½
S 1	Sociology	2	S 2	Sociology	2
		12½			12½
<i>Fifth Year</i>					
C 7	Engineering Conference . . .	½	C 8	Engineering Conference . . .	½
CI 23	Engineering Structures . . .	3	CI 24	Engineering Structures . . .	3
CI 25	Concrete	2	CI 26	Concrete	2
CI 29	Design of Structures	3	CI 30	Design of Structures	3
CI 31	Highway Engineering	2	CI 32	Highway Engineering	2
IN 5	Industrial Management I . . .	2	IN 6	Industrial Management II . .	2
		12½			12½

NOTE: In addition to the prescribed program shown above, each student must complete at least ten semester hours of credit in co-operative work, making a total of 147 semester hours required for the S.B. degree.

II. *Mechanical Engineering*

The field of mechanical engineering is concerned with the harnessing of our power resources by means of machinery to perform useful work. With the increasing mechanization of all industry which has taken place during the last century, the field has so broadened as to include all lines of industry.

In contrast to the civil engineer who deals primarily with static forces, the mechanical engineer is more concerned with the mechanics of motion or kinetics. And because moving parts require constant care and adjustment, the mechanical engineer has the task not only of designing and installing complicated machinery but also of operating it efficiently after it has been installed.

Among the major branches of mechanical engineering are included combustion or power production engineering, machine and machine-tool design, railway mechanical engineering, automotive engineering, aeronautical engineering, refrigerating engineering, and air conditioning engineering. The construction and operation of furnaces, boilers, and engines, the design of all kinds of machinery from pocket watches to steel mills, the construction and operation of railway and other transportation equipment including automobiles and airplanes, and even control of atmospheric conditions by means of heating, ventilating, and refrigerating equipment, all fall in this field.

Since machinery is so predominantly the concern of the mechanical engineer, the program of study is designed to give the student considerable training in the principles underlying the design and operation of engines, power transmission devices, machine tools, and other machinery. This, of course, implies a thorough study of the physical laws concerning motion and transfer of energy. Applied mechanics and thermodynamics occupy a prominent place in the curriculum. The program of instruction thus gives the student a broad foundation in those fundamental subjects essential to all engineering practice, and in the senior year, provides opportunity for limited specialization by means of an option in aeronautics in addition to the general course.

For those students desiring to specialize in the field of industrial management, attention is called to the curriculum in industrial engineering, the basic training of which is essentially the same as that in mechanical engineering.

The graduate mechanical engineer generally finds employment in an industrial plant, either in design and research or in plant operation and maintenance. And if his abilities lie in that direction, he frequently is entrusted after a time with greater and greater responsibility for the successful management of the enterprise.

II. Mechanical Engineering

FIRST TERM			SECOND TERM		
Course No.	Course	Semester Hours	Course No.	Course	Semester Hours
<i>First Year</i>					
Ch 1	General Chemistry	4	Ch 2	General Chemistry	4
D 1	Eng. Drawing	3	D 2	Descriptive Geometry . .	3
E 1	English I.	3	E 2	English I.	3
M 1	Algebra	3			
M 3	Trigonometry	2	M 4	Analytic Geometry	5
PE 1	Physics I.	3	P 2	Physics I.	3
PE 1	Hygiene	1		Orientation	0
	Physical Training	0		Physical Training	0
		<u>19</u>			<u>18</u>
<i>Second Year</i>					
EL 5	Electrical Machinery . . .	4	D 4	Machine Drawing	2
IN 3	Production Processes I. . .	2½	IN 4	Production Processes II .	1½
M 5	Differential Calculus . . .	3	M 6	Integral Calculus	3
P 3	Physics II.	2	P 4	Physics II.	2
P 5	Physics Laboratory	1	P 6	Physics Laboratory	1
		<u>12½</u>	ME 20	Applied Mechanics	3
					<u>12½</u>
<i>Third Year</i>					
CI 11	Hydraulics	2½	CI 12	Hydraulics	2
Ec 21	Economics	2	Ec 22	Economics	2
ME 1	Mechanism	3	EL 6	Electrical Measurements	2½
ME 21	Applied Mechanics	3	ME 22	Strength of Materials. . .	3
ME 29	Heat Engineering	2	ME 30	Heat Engineering	3
		<u>12½</u>			<u>12½</u>
<i>Fourth Year</i>					
IN 5	Industrial Management I . .	2	IN 6	Industrial Management II .	2
ME 23	Strength of Materials. . .	2	ME 24	Advanced Mechanics. . .	2
ME 31	Heat Engineering	2½	ME 32	Heat Engineering	2½
ME 61	Mechanical Eng. Lab. . .	2	ME 62	Mechanical Eng. Lab. . .	2
ME 27	Metallography.	2	ME 42	Heating and Air Cond.	
			or ME 40	Aerodynamics.	2
S 1	Sociology	2	S 2	Sociology	2
		<u>12½</u>			<u>12½</u>
<i>Fifth Year</i>					
C 7	Engineering Conference . .	½	C 8	Engineering Conference . .	½
IN 17	Personnel Admin.	3	IN 22	Contracts	2
ME 51	Machine Design	3	ME 52	Machine Design	3
ME 63	Mechanical Eng. Lab. . .	2½	ME 44	Power Plant Eng.	2½
	Professional Electives. . .	4½		Professional Electives. . .	4½
		<u>13½</u>			<u>12½</u>
<i>Electives:</i>			<i>Electives:</i>		
ME 15	Industrial Plants	2½	ME 16	Industrial Plants	2½
ME 33	Refrigeration	2	ME 34	Steam Turbines.	2
ME 73	Aircraft Structures	2	ME 74	Aircraft Structures	2
ME 39	Engine Dynamics	2½	ME 76	Aircraft Engine Design .	2½

NOTE: In addition to the prescribed program shown above, each student must complete at least ten semester hours of credit in co-operative work, making a total of 147 semester hours required for the S.B. degree.

III. *Electrical Engineering*

Electrical engineering is still comparatively new; it was barely two generations ago that Thomas Edison built the first central electric power station in New York City, and it was only a generation ago that the radio made its first appearance. In consequence, we find this branch of engineering more closely related to research in pure science than are the older branches of civil and mechanical engineering. Moreover, the tremendous developments of the past decade in theoretical physics have been largely in areas closely related to electrical engineering so that today greater opportunities for intellectual pioneering appear to exist in this field of engineering than in other branches of the profession.

The electrical industry and the field of electrical engineering are usually divided into two main branches, one having to do with electrical power and the other, communications. The power group deals principally with large equipment and apparatus employing heavy currents; the communications group handles smaller more delicate equipment employing small or even minute currents. Electrical engineering thus embraces the generation, transmission, and distribution of electricity for light and power purposes, the operation of electric railways, the design, construction, and operation of all types of electrical equipment including telephone, telegraph, and radio apparatus as well as lamps, motors, and household appliances. In addition, the field of illuminating engineering having to do with the problems of proper light intensities, has in recent years assumed increasing importance.

Since electricity is without material embodiment and can be treated only by mathematical reasoning, the electrical engineer is frequently required to go into higher mathematics seldom used in other fields. It is also absolutely essential that the electrical engineer who hopes to make a success of his work be able to grasp readily and absorb effectively the meaning and content of the many scientific papers having to do with research in this field. For these reasons, the program of study in electrical engineering includes more work in the pure sciences of mathematics and physics than do the other courses, as well as a solid grounding in engineering fundamentals. This is followed by a thorough study of electrical theory and its applications in the power, high voltage, and electronics fields.

The profession of electrical engineering affords a wide diversification of employment opportunities. If one is research-minded, opportunity to develop one's talents may be found in one of the great laboratories; if one is more interested in plant problems, opportunity can be found in the manufacturing or operating organizations; and if one is sales-minded he may find a career as a sales engineer.

III. Electrical Engineering

FIRST TERM			SECOND TERM		
Course No.	Course	Semester Hours	Course No.	Course	Semester Hours
<i>First Year</i>					
Ch 1	General Chemistry	4	Ch 2	General Chemistry	4
D 1	Eng. Drawing	3	D 2	Descriptive Geometry . .	3
E 1	English I	3	E 2	English I	3
M 1	Algebra	3			
M 3	Trigonometry	2	M 4	Analytic Geometry	5
P 1	Physics I	3	P 2	Physics I	3
PE 1	Hygiene	1		Orientation	0
	Physical Training	0		Physical Training	0
		19			18
<i>Second Year</i>					
EL 1	Electrical Eng. I	1	EL 2	Electrical Eng. I	1
IN 3	Production Processes I . .	2½	IN 4	Production Processes II . .	1½
M 5	Differential Calculus . . .	3	M 6	Integral Calculus	3
P 3	Physics II	2	P 4	Physics II	2
P 7	Physics Laboratory	2	P 8	Physics Laboratory	2
D 3	Machine Drawing	2	ME 20	Applied Mechanics	3
		12½			12½
<i>Third Year</i>					
Ec 21	Economics	2	Ec 22	Economics	2
EL 9	Electrical Eng. II	1½	EL 10	Electrical Eng. II	2
EL 11	Electrical Eng. Lab. . . .	1	EL 12	Electrical Eng. Lab. . . .	1
EL 13	Elec. Measurements I . . .	2½	EL 14	Elec. Measurements II . .	2
ME 21	Applied Mechanics	3	ME 22	Strength of Materials . . .	3
CI 11	Hydraulics	2½	M 7	Differential Equations . .	2½
		12½			12½
<i>Fourth Year</i>					
EL 17	Electrical Eng. III	2	EL 18	Electrical Eng. III	2
EL 19	Electrical Testing Lab. . .	2	EL 20	Electronics Lab. I	1½
EL 25	Electronics	1	EL 22	Electronics	2½
EL 23	Electrical Meas. Lab. . . .	2	EL 24	Adv. Elec. Meas. Lab. . .	2
ME 25	Strength of Materials . . .	1½			
ME 35	Heat Engineering	2	ME 36	Heat Engineering	2½
S 1	Sociology	2	S 2	Sociology	2
		12½			12½
<i>Fifth Year</i>					
C 7	Engineering Conference . .	½	C 8	Engineering Conference . .	½
EL 25	Electrical Eng. IV	2½	EL 26	Electrical Eng. IV	2½
EL 27	Adv. Elec. Eng. Lab. . . .	2	EL 28	Adv. Electronics Lab. . .	2
EL 29	Electrical Eng. V-A	2	EL 30	Electrical Eng. V-A	2
EL 31	Elec. Eng. V-B	2	EL 32	Electrical Eng. V-B	2
EL 35	Ultra H. F. Technique . .	2	EL 36	Ultra H. F. Technique . .	2
EL 37	Electronics Lab. II	1½	EL 38	Ultra H. F. Tech. Lab. . .	1½
		12½			12½

NOTE: In addition to the prescribed program shown above, each student must complete at least ten semester hours of credit in co-operative work, making a total of 147 semester hours required for the S.B. degree.

IV. *Chemical Engineering*

The field of chemical engineering is relatively new. It has grown out of the discoveries of the chemical laboratories which have served as a foundation for a great many new industries whose production processes involve chemical as well as physical changes. Petroleum refining, coal carbonization, manufacture of rayon and cellophane, and hundreds of other industries require men trained in chemistry as well as in engineering. Many older industries such as foods, textiles, and leather are also employing chemical engineers.

The chemical engineer has been defined as a "professional man experienced in the design, construction, and operation of plants in which materials undergo chemical and physical change." It is the duty of the chemical engineer to cut the costs, increase production, and improve the quality of the products in the industry.

The chemical engineer must possess a working knowledge of the fundamental sciences, he must understand and know how to work with men, and he must recognize in his work the "correct appraisal of values and costs." In addition, he must possess the ability to apply his knowledge to the development and operation of chemical processes and plants.

In addition to the fundamental courses in chemistry, mathematics, and physics required of all engineering students, a considerable amount of time is devoted to more advanced work in chemistry as a foundation for the study of chemical technology. Instruction in the elements of mechanical and electrical engineering also gives the student a fairly broad engineering background upon which to base his study of chemical engineering unit operations. Courses of a more liberal nature are included in the curriculum in order that the student may broaden his educational background. Since the field of chemical engineering is so varied, the curriculum has been designed to give the student a broad training rather than a specialized training in one specific industry. It is believed that this training will enable the student readily to acclimate himself to whatever industry he chooses to enter.

Because of the complex nature of many chemical processes and because of the difficulty of translating laboratory results into full-scale plant operations, there has developed in many chemical plants the so-called semi-works or pilot plant. Here new processes developed by the chemists in the research laboratory are put to the test of actual plant conditions on a small scale. And it is here that the young chemical engineer often finds himself upon graduation. If he is able to understand the chemist on the one side and the plant operator on the other, and if he is technically competent as well, he will soon find opportunity for advancement either in one of the technical branches of the industry, such as design, development, research, and production, or in the sales and management fields in which chemical engineering is essential.

IV. Chemical Engineering

FIRST TERM			SECOND TERM		
Course No.	Course	Semester Hours	Course No.	Course	Semester Hours
First Year					
Ch 1	General Chemistry	4	Ch 2	General Chemistry	4
D 1	Eng. Drawing	3	D 2	Descriptive Geometry . .	3
E 1	English I.	3	E 2	English I.	3
M 1	Algebra	3			
M 3	Trigonometry	2	M 4	Analytic Geometry	5
P 1	Physics I.	3	P 2	Physics I.	3
	Physical Training	0		Physical Training	0
PE 1	Hygiene	1		Orientation	0
		19			18
Second Year					
Ch 9	Qualitative Analysis	3	Ch 12	Quant. Analysis	2
Ch 11	Qual. Analysis Lab. . . .	2½	Ch 14	Quant. Analysis Lab. . . .	1½
Ch 51	Sources of Information . .	1	ME 20	Applied Mechanics	3
M 5	Differential Calculus	3	M 6	Integral Calculus	3
P 3	Physics II.	2	P 4	Physics II.	2
P 5	Physics Laboratory	1	P 6	Physics Laboratory	1
		12½			12½
Third Year					
Ch 13	Quantitative Analysis . .	2	Ch 40	Physical Chemistry	2½
Ch 17	Quant. Analysis Lab. . . .	1	ChE 2	Ind. Stoichiometry	2
ChE 1	Flow of Fluids	2	Ec 22	Economics	2
Ec 21	Economics	2	ME 22	Strength of Materials . .	3
ME 21	Applied Mechanics	3	ME 30	Heat Engineering	3
M 7	Differential Equations . .	2½			
		12½			12½
Fourth Year					
Ch 31	Organic Chemistry	2	Ch 32	Organic Chemistry	2
Ch 33	Organic Chem. Lab. . . .	1	Ch 34	Organic Chem. Lab. . . .	1
Ch 45	Physical Chemistry	3	Ch 46	Physical Chemistry	3
ChE 3	Unit Operations	3	ChE 4	Unit Operations	3
ChE 5	Unit Operations Lab. . . .	1½	ChE 6	Unit Operations Lab. . . .	1½
S 1	Sociology	2	S 2	Sociology	2
		12½			12½
Fifth Year					
C 7	Engineering Conference. .	½	C 8	Engineering Conference. .	½
Ch 35	Org. Chemistry	2			
Ch 39	Org. Chem. Lab.	1			
ChE 7	Inorganic Chem. Tech. . .	2	ChE 8	Organic Chem. Tech. . .	2
ChE 9	Chemical Proc. Lab. . . .	3	ChE 10	Chemical Eng. Projects. .	4
ChE 11	Chem. Eng. Thermodynamics	2	ChE 12	Engineering Materials. . .	2
IN 27	Indus. Management	2	EL 5	Elec. Machinery	4
		12½			12½

NOTE: In addition to the prescribed program shown above, each student must complete at least ten semester hours of credit in co-operative work, making a total of 147 semester hours required for the S.B. degree.

v. Industrial Engineering

With the growth of large corporations the problems of direction, supervision, and co-ordination of the various parts of a given enterprise have demanded more competent and better trained managers. About fifty years ago, Frederick W. Taylor undertook to apply to the problems of industrial management what we now call "the scientific method" or "the engineering approach". He reasoned that it was management's business to know what constituted a proper day's work and that the way to get the facts was through research and experiment on a scientific basis. He defined "scientific management" not as any device or scheme or gadget, but as a new outlook—a new viewpoint based upon a solid foundation of fact. The methods employed by Taylor and by those who came after him have undergone considerable modification, but the concept of scientific management which he formulated has gained wider and wider recognition during the intervening years from both employers and employees.

This growing recognition of the value of a scientific approach to the problems of industrial management early created a demand for men trained in engineering and science, who possessed a knowledge of business as well, to assume positions of administrative responsibility in industry. To meet this demand, courses were established in many engineering colleges to provide a thorough training in engineering fundamentals together with a specialized training in business administration which would prepare the students for managerial responsibilities in technical industries. These curricula are variously entitled industrial engineering, administrative engineering or engineering administration, but all are designed to lead ultimately to positions of administrative or executive responsibility, rather than to positions which involve highly specialized engineering responsibility.

The curriculum in industrial engineering, then, provides a course of study which is essentially the same as that for mechanical engineering in the first three years. In the last two years, however, many of the advanced engineering courses are replaced by courses in business management.

Upon graduation, the young industrial engineer may find his way into plant work perhaps in the methods department, he may prefer office work and enter the accounting department, or he may incline toward sales engineering work and after a period in the factory find himself in the sales department.

There is also opportunity for the experienced industrial engineer in the consulting field. Upon becoming especially skilled in the technique of management, the consulting industrial engineer is called in by industry for advice upon the installation and maintenance of sound management principles and policies, and to assist in the reorganization of enterprises which have failed.

V. Industrial Engineering

FIRST TERM			SECOND TERM		
Course No.	Course	Semester Hours	Course No.	Course	Semester Hours
<i>First Year</i>					
Ch 1	General Chemistry	4	Ch 2	Inorganic Chemistry . . .	4
D 1	Eng. Drawing	3	D 2	Descriptive Geometry . .	3
E 1	English I.	3	E 2	English I.	3
M 1	Algebra	3			
M 3	Trigonometry	2	M 4	Analytic Geometry	5
P 1	Physics I.	3	P 2	Physics I.	3
PE 1	Hygiene	1		Orientation	0
	Physical Training	0		Physical Training	0
		19			18
<i>Second Year</i>					
EL 5	Electrical Machinery . . .	4	D 4	Machine Drawing	2
IN 3	Production Processes I. . .	2½	IN 4	Production Processes II . .	1½
M 5	Differential Calculus . . .	3	M 6	Integral Calculus	3
P 3	Physics II.	2	P 4	Physics II.	2
P 5	Physics Laboratory	1	P 6	Physics Laboratory	1
			ME 20	Applied Mechanics	3
		12½			12½
<i>Third Year</i>					
CI 11	Hydraulics	2½	CI 12	Hydraulics	2
Ec 21	Economics	2	Ec 22	Economics	2
ME 1	Mechanism	3	EL 6	Electrical Measurements .	2½
ME 21	Applied Mechanics	3	ME 22	Strength of Materials. . .	3
ME 27	Metallography	2	IN 28	Motion and Time Study . .	3
		12½			12½
<i>Fourth Year</i>					
IN 5	Industrial Management I . .	2	IN 6	Indust. Management II . .	2
IN 7	Industrial Accounting . . .	2½	IN 8	Industrial Accounting . . .	4
IN 23	Statistics	2	IN 24	Statistics	2
ME 23	Strength of Materials. . .	2			
ME 35	Heat Engineering	2	ME 36	Heat Engineering	2½
S 1	Sociology	2	S 2	Sociology	2
		12½			12½
<i>Fifth Year</i>					
C 7	Engineering Conference . .	½	C 8	Engineering Conference . .	½
IN 14	Industrial Finance	2½	IN 22	Contracts	2
IN 15	Sales Engineering	2½	IN 30	Tech. of Exec. Control . .	3
IN 17	Personnel Admin.	3	ME 16	Industrial Plants	2½
ME 69	Testing Mat. Lab.	1½	ME 42	Heating and Air Cond. . .	2
	Elective	2½		Elective	2½
		12½			12½

NOTE: In addition to the prescribed program shown above, each student must complete at least ten semester hours of credit in co-operative work, making a total of 147 semester hours required for the S.B. degree.

*Synopses of Courses of Instruction**

Co-ordination

C 7 Engineering Conference

This course is designed to bring about analytical thinking and systematic planning of the "after-graduation-employment" problem. It is conducted as an open discussion class by the Department of Co-operative Work. Each Co-ordinator has in his class those students who have been placed and supervised on co-operative work by him. Each student analyzes and applies to himself as the "product" the fundamental principles of merchandising. Whenever practicable prominent men who are leaders in the fields of employment counseling, business, or engineering present the employers' viewpoint. Thus the graduating seniors are brought face to face during the year with one of the most important and perplexing problems of life, namely, how to "sell their services," thereby aiming to bring a co-ordinated training of theory and practice to a logical conclusion.

½ semester hour credit

C 8 Engineering Conference

This course is the sequel to C 7 and consists of the practical application of the techniques of job-getting which have been analyzed and discussed in that course. It is conducted on a conference rather than on a class basis, the major portion of the time being devoted to collection of employment prospects and to the planning and writing of letters to and securing interviews with prospective employers. It is intended that this course will culminate in the attainment by each student of his after-graduation job.

½ semester hour credit

Chemistry

Ch 1 General Chemistry

The fundamental ideas of matter and energy; the properties of gases, liquids, and solids; molecular weights; equations, atomic structure, classification of the elements; ionic reactions; the chemistry of the non-metals, and radio activity are among the

*For definition of pre-requisite and preparatory courses, see page 124.

topics which are covered in the course. Two lectures, one recitation, and a three-hour laboratory period comprise the weekly schedule of instruction.

4 semester hour credits

Ch 2 General Chemistry

A continuation of Ch 1 General Chemistry. Modern ideas covering the theory of solutions of electrolytes are discussed together with experimental facts. The chemistry of the metals is covered thoroughly, and time is devoted to an introduction to organic chemistry. The latter part of the course is given to qualitative analysis with particular emphasis on the laboratory work. The plan of instruction is identical with that of Ch 1.

Preparation: Ch 1

4 semester hour credits

Ch 9 Qualitative Analysis

The object of this course is to give the student knowledge of the various fundamental qualitative laws and principles. A portion of the time is devoted to the formulation of numerical terms which are essential to the understanding of the mass action law, ionic equilibria, solubility product, hydrolysis, and redox constants. The use of the newer spot tests is stressed and where possible their reactions explained. Whenever necessary, lectures demonstrating the various semi-micro techniques are given, as well as those designed to illustrate more fundamental properties of solutions.

Pre-requisite: Ch 1, Ch 2

3 semester hour credits

Ch 11 Qualitative Analysis Laboratory

This course, which is carried out on a semi-micro scale, applies the material covered in Ch 9 to actual problems. After some preliminary experiments certain procedures are combined and the separations and identifications made on both known and unknown solutions. Finally these are combined into a complete, systematic scheme which is applied to artificially prepared mixtures and industrial materials. Careful manipulations, thoroughness in observation, and accuracy in arriving at conclusions are expected of each student.

Pre-requisite: Ch 1, 2

Must be taken concurrently: Ch 9

2½ semester hour credits

Ch 12 *Quantitative Analysis*

It is the purpose of this course to give to the student a realization of the scientific development of quantitative methods. Each of the major operations such as weighing, measurement of volumes, titration, filtration, ignition, and combustion, is considered from the standpoint of the theoretical principles involved, and with due consideration of the manipulative technique necessary.

This is followed by the combination of these operations and their application to actual analysis including a comprehensive study of volumetric methods and of the more elementary parts of gravimetric analysis.

As the correct calculation of analytical results is of no less importance than the actual procedures of analysis, a number of problems form a very important part of the course.

Pre-requisite: Ch 1, 2

2 semester hour credits

Preparation: Ch 9

Must be taken concurrently: Ch 14

Ch 13 *Quantitative Analysis*

This course, a continuation of Ch 12, is similarly conducted. After consideration of the more advanced parts of gravimetric analysis and of systematic mineral procedures, the remainder of the course consists of a critical discussion of common technical methods, including the standard ones for the analysis of steel, non-ferrous alloys, fuels, oils, gas, water, fertilizers, and foods.

Pre-requisite: Ch 1, 2

2 semester hour credits

Preparation: Ch 12

Must be taken concurrently: Ch 17

Ch 14 *Quantitative Analysis Laboratory*

This is a laboratory course intended to illustrate by actual use the various analytical methods considered in Ch 12. After certain preliminary experiments designed to acquaint the student with the apparatus used, volumetric analysis (including acidimetry and alkalimetry), oxidation, reduction, and precipitation methods are taken up. This is followed by simple gravimetric analysis.

Pre-requisite: Ch 1, 2

1½ semester hour credits

Preparation: Ch 11

Must be taken concurrently: Ch 12

Ch 17 *Quantitative Analysis Laboratory*

This course includes not only the usual illustrative gravimetric determinations but also electrolytic, electrometric, combustion,

and optical methods. In the latter half of the course actual industrial methods are used so that at its completion, the student should be able to perform satisfactorily any ordinary analysis.

Pre-requisite: Ch 1, 2

Preparation: Ch 14

Must be taken concurrently: Ch 13

Ch 31 Organic Chemistry

A study of the basic principles of the aliphatic organic compounds. The resemblance of classes is stressed and emphasis is placed on genetic charts. The industrial significance of the subject is discussed to show the practical nature of organic chemistry.

Pre-requisite: Ch 1, 2

2 semester hour credits

Preparation: Ch 40

Must be taken concurrently: Ch 33

Ch 32 Organic Chemistry

A continuation of Ch 31 dealing with the preparation and characteristic reactions of the aromatic organic compounds. Special attention is given to polymerization, diazotization, dyes, and the use of catalyst, nitration, and sulfonation.

A few of the more important heterocyclic compounds are studied.

Preparation: Ch 31

2 semester hour credits

Must be taken concurrently: Ch 34

Ch 33 Organic Chemistry Laboratory

Preparations and reactions designed to teach the laboratory technique involved in organic chemistry. The method of keeping notes on the work performed and reactions involved is stressed.

Pre-requisite: Ch 1, 2

1 semester hour credit

Preparation: Ch 40

Must be taken concurrently: Ch 31

Ch 34 Organic Chemistry Laboratory

This is a continuation of Ch 33. The preparations in this course serve to acquaint the student with such types of chemical reactions as sulfonation, the Grignard reaction, the Perkins reaction,

Skraup's synthesis, the Friedal-Crafts' reaction, and the preparation of dyes.

In addition to the manipulation techniques taught in Ch 33, this course introduces the use of vacuum distillations, fractional crystallization, and separations by physical and chemical means.

Preparation: Ch 33

1 semester hour credit

Must be taken concurrently: Ch 32

Ch 35 Organic Chemistry

A continuation of Ch 32 and includes a study of the preparation and reactions of heterocyclic and alicyclic compounds.

Preparation: Ch 32

2 semester hour credits

Must be taken concurrently: Ch 39

Ch 39 Organic Chemistry Laboratory

The purpose of this course is to familiarize the student with the chemical and physical tests used in qualitative organic analysis. A series of experiments, based on the classification of reactions of organic compounds, serves as a basis for the examination of simple liquid and simple solid compounds and the preparation of suitable derivatives of them.

Preparation: Ch 34

1 semester hour credit

Must be taken concurrently: Ch 35

Ch 40 Physical Chemistry

This course begins with a short resume of the field of physical chemistry, and its relationship to the other courses in chemistry and chemical engineering. Following this, atomic and molecular weights, and the properties of gases, liquids, solids, ionized, non-ionized, and colloidal solutions are taken up.

Pre-requisite: Ch 12, Ch 14

2½ semester hour credits

Preparation: Ch 13, Ch 17

Ch 45 Physical Chemistry

A continuation of Ch 40 including a consideration of the following topics: rates of reaction, homogeneous and heterogeneous equilibrium, and thermochemistry.

Pre-requisite: Ch 13, Ch 17

3 semester hour credits

Preparation: Ch 40

Ch 46 Physical Chemistry

A continuation of Ch 45 including electrical conductance, electrolytic equilibrium, electrolysis, photochemistry and atomic structure.

Preparation: Ch 45

3 semester hour credits

Ch 51 Sources of Information

This course is intended to acquaint the chemical student with the constantly increasing volume of scientific literature pertaining to the field of chemistry.

After a brief outline of the entire field of scientific literature, and a description of various methods of library procedure, the various available sources of scientific information are investigated. A series of individual library problems, in which the student is required to apply the information obtained in the classroom, forms a very important part of the course.

Pre-requisite: Ch 1, Ch 2

1 semester hour credit

Chemical Engineering

ChE 1 Flow of Fluids

A study of methods of determining rates of flow and power consumption of fluids flowing through pipe lines. This course differs from the usual course in hydraulics chiefly in the amount of emphasis placed on the flow of gases and oils.

Preparation: P 1

2 semester hour credits

ChE 2 Industrial Stoichiometry

This is essentially a problem course developed around the study of fuels and combustion. Special attention is given to principles underlying the methods of calculation which are of value to the chemical engineer.

Pre-requisite: Ch 12

2 semester hour credits

Preparation: Ch 13

ChE 3 Unit Operations

This course consists of a study of the mechanical operations peculiar to the chemical industry. Such unit operations as flow of heat, evaporation, and humidity control are considered. Many problems of a practical nature are solved during the course.

Pre-requisite: ChE 1

3 semester hour credits

Must be taken concurrently: ChE 5

ChE 4 Unit Operations

This is a continuation of ChE 3. The unit operations studied are drying, crushing, separation, filtration, distillation, and gas absorption.

Pre-requisite: ChE 2

3 semester hour credits

Preparation: ChE 3

Must be taken concurrently: ChE 6

ChE 5 Unit Operations Laboratory

This laboratory course is based on the unit operations studied in ChE 3. The squad system is used. Experiments are performed on small-scale plant equipment that has been specially designed or selected for the purpose. Detailed reports are required.

Must be taken concurrently: ChE 3

1½ semester hour credits

ChE 6 Unit Operations Laboratory

This is a continuation of ChE 5. Experiments are performed in the unit operations which are being studied simultaneously in ChE 6.

Must be taken concurrently: ChE 4

1½ semester hour credits

ChE 7 Inorganic Chemical Technology

A study of the processes and manufacturing methods used in the more important industries based on inorganic chemical technology. Existing material and economic relationships are emphasized. Plant inspection trips and problems pertaining to the industries studied are included.

Pre-requisite: Ch 9

2 semester hour credits

Preparation: ChE 2

ChE 8 Organic Chemical Technology

The course consists of a study of industrial organic chemical processes. An attempt is made to co-ordinate the fundamental principles of organic synthesis with the requirements of industrial plants. Attention is given to the special features which must be considered in the design and construction of equipment used for the production of industrial organic chemicals.

Pre-requisite: ChE 4, Ch 32

2 semester hour credits

ChE 9 Chemical Process Laboratory

This course attempts to teach the fundamentals of research by determining the optimum conditions for carrying out some unit process. After a survey of the literature has been made, a research plan is formulated. Variables are noted and their effect on the chemical process determined through laboratory experiments. The writing of reports is an essential feature of the course.

Preparation: ChE 4

3 semester hour credits

ChE 10 Chemical Engineering Projects

The design of equipment of commercial size forms the basis of the course. Design data is taken from the literature when it is available. Other data is obtained by experiment on small scale industrial equipment in the laboratory. From this data and information acquired in previous courses, the commercial scale equipment is designed. Students qualified by industrial experience are sometimes assigned problems suggested by their co-operating firms which are worked out under the joint supervision of the plant engineers and the members of the staff.

Preparation: ChE 4

4 semester hour credits

ChE 11 Chemical Engineering Thermodynamics

A study of the fundamental principles of thermodynamics as they apply to chemical engineering. Special attention will be given to high pressure operations because of their vital importance. The usefulness of thermodynamics to the chemical engineer for the purpose of determining properties of materials, energy balances, equilibrium conditions, and in determining the availability of energy, which is the driving force for all of his unit operations, is emphasized.

Pre-requisite: Ch 46

2 semester hour credits

ChE 12 Engineering Materials

A study of the most important properties of those engineering materials which the chemical engineer utilizes in his work, and how these properties are affected by composition, heat treatment, mechanical work, and corrosion.

Stress is placed upon the selection of the correct material for a given use through the knowledge of its properties and the intelligent use of engineering principles.

A study of the causes of corrosion in both ferrous and non-ferrous metals and alloys is made as well as methods of combating corrosion.

2 semester hour credits

Civil Engineering

CI 3 Surveying I

The course is divided into two portions, the first of which treats of basic principles such as taping, theory of the transit and use of the transit, theory of the level, care of the level and use of the level.

The second portion deals with closed and random traverses, both the D.M.D. and the co-ordinate methods being used. Particular stress is laid upon having the student use the methods and procedures as outlined by the Massachusetts Land Court.

Pre-requisite: M 3

1½ semester hour credits

CI 4 Surveying II

This course is a continuation of course CI 3. The applications of leveling are first studied; stressing, differential leveling, double rodged leveling, profile leveling, and the setting of batter boards.

The principles of reconnaissance, preliminary and location surveys, as applied to highway and railroad surveying, are used as an introduction to "route surveying". These are followed by the principles and application of simple, compound, reversed, and vertical curves including sight distances, and areas bounded by circular arcs. Many of the more difficult or complex problems are solved by the use of rectangular co-ordinates (or by the use of right triangles), thus giving a continuation of the co-ordinate method as given in course CI 3. The railroad curve and the highway curve (i.e., the circular arc) are simultaneously studied throughout the course.

Preparation: CI 3

2½ semester hour credits

CI 5 Surveying I, F. & P.

The course is divided into two equal parts; the first part is devoted entirely to field work, while the second part is devoted entirely to office, or plotting work.

In the field an accurate tape and transit closed traverse is run. The angles are read by repetition. The distances are taped and each traverse point is carefully tied in. The aim is to obtain data for a closed traverse equal to or better than a Class A survey as set forth by the Massachusetts Land Court. Physical features are located from this traverse. The best methods and procedures of taking field notes are emphasized at all times.

In the drafting room the student is required to compute his closed traverse by both the D.M.D. and rectangular co-ordinate methods, to submit an original drawing showing the traverse and

physical features, and to trace this drawing with careful attention to such details as lettering, appearance, and title.

Pre-requisite: D 1

1 semester hour credit

Must be taken concurrently: CI 3

CI 6 Surveying II, F. & P.

A reconnaissance line is studied and from this a preliminary center line in the form of a random traverse is run. From this preliminary line all the physical features several hundred feet each side of the center line are located. A map is then prepared showing these data. From this map suitable curves are computed and the location of the center line thus determined is staked out in the field

Preparation: CI 5

1 semester hour credit

Must be taken concurrently: CI 4

CI 7 Surveying III

This course is a continuation of CI 4. The various field procedures and methods of computation for taking cross sections are studied. Both the average end area method of computing volumes and the prismoidal formulae are taught. The principles and methods used in balancing volumes and constructing and solving mass diagrams are presented.

The spiral or transition curve as applied to railroad and highway location is taken up. In the latter part of this course the fundamentals of railroad track problems are presented.

Pre-requisite: CI 3, CI 4

2 semester hour credits

CI 8 Surveying IV

This course consists of lectures and problem work in plane triangulation; Coast and Geodetic leveling; the plane table with its applications to topographic surveying, and the theory of the sextant is also presented with its applications to hydrographic surveying. The use of the transit in studying astronomical surveying problems in azimuth and time, and the computations of geodetic triangulations and the conversion to rectangular coordinates from geodetic are also studied in this course.

Preparation: CI 7

2 semester hour credits

CI 9 Surveying III, F. & P.

This is a continuation of course CI 6. A profile of the center line is run and from this a suitable sub-grade profile of this line is obtained. Further field work is undertaken to obtain a complete set

of cross section notes for the whole line, and special emphasis on field notes is made throughout the course.

In the drafting room the volumes and balanced volumes are computed. From these a mass diagram is prepared and a complete earthwork solution is solved by use of the mass diagram and the profile.

Pre-requisite: CI 5, CI 6

1 semester hour credit

Must be taken concurrently: CI 7

CI 10 Surveying IV, F. & P.

This course is divided nearly equally into two portions—one consisting of field work, and the other drafting room work.

The field work is triangulation, including measurements of base line, measurement of angles by repetition with precise transits or theodolite. A complete plane table map is drawn locating physical features and contours; and some of the more elementary plane table problems such as the intersection, the resection, and the three-point problems are taken up. Precise and Coast and Geodetic leveling are also considered, along with an observation on the sun for time and azimuth and an observation on Polaris for true north.

The drafting room work consists of the preparation of a topographic map, tracing of the topographic map, triangulation computations, and the solution (analytic solution) of such problems as the eccentric and the three point problem.

Preparation: CI 9

1 semester hour credit

Must be taken concurrently: CI 8

CI 11 Hydraulics I

This course is divided into two parts—the first part which treats with the laws of hydrostatics, and the second part which deals with the laws of hydrokinetics.

Under the topic of hydrostatics the following material is studied: open end U gauges, differential manometers, pressure intensity, total pressures, location of center of pressure (horizontally and vertically), pressures on curved and inclined surfaces, hoop tension and end tension, simple dams, and flotation problems.

The laws of hydrokinetics, including those of the flow of liquids through Venturi meter, orifices, short tubes, pipe lines, and open channels are studied with particular reference to Bernoulli's theorem.

In the hydraulic demonstration laboratory the following demonstrations are made: Venturi meter, orifice meter (submerged orifice), discharge of orifice into the atmosphere, discharge through orifice or short tube under falling head, and trajectory of discharge for either a short tube or an orifice.

Pre-requisite: ME 20

2½ semester hour credits

Preparation: ME 21

CI 12 *Hydraulics II*

This course is a continuation of course CI 11. Hazen and Williams' formula is developed and from a flow chart of Hazen and Williams' formula, flow through pipe lines, equivalent pipes, and the application to simple grid systems are studied. Rectangular weirs, with and without end contractions and with and without the velocity of approach being considered, are studied. The only other weir emphasized is the V notched or triangular weir. The Cipolletti weir and the proportional weir are discussed.

Dimensional analysis as applied to fluid mechanics is studied so that the student is able dimensionally to evaluate various hydraulic formulae. The flow of fluids, and gases, through closed conduits are considered by the application of Reynolds' number determining whether the flow be laminar or turbulent.

This is followed by the theory and application of the pitot tube as applied to hydraulic problems.

The course concludes with a study of the dynamic action of jets and stricims.

In the hydraulic laboratory the following demonstrations are made: rectangular weirs, triangular weir, pitot tube, and laminar and turbulent flow by Reynolds' number apparatus.

Preparation: CI 11

2 semester hour credits

CI 15 *Theory of Structures*

The course comprises lectures and recitation work in the study of the loads, reactions, shears, and moments acting upon statically determinate structures of various kinds such as roofs and bridges. A complete and thorough presentation of the usual methods of determining bar stresses in simple trusses is also undertaken.

All of the foregoing studies are covered in detail by both algebraic and graphic methods.

Following a discussion of roof truss types and loading, the above methods are applied to the complete analysis of a roof truss.

Pre-requisite: ME 22

3 semester hour credits

Preparation: M 23

CI 16 *Theory of Structures*

A complete study of the function of influence lines in determining the shears, moments, and stresses produced in various types of simple structures by moving load systems both distributed and concentrated. Methods of providing for impact stresses in structures are discussed and analyzed. The material given in CI 15 and also in this course is then summarized by the solution of problems determining the design stresses for several types of bridge structures.

Preparation: CI 15

3 semester hour credits

CI 18 Concrete Testing Laboratory

This course covers the testing of Portland cement and aggregates used in the forming of concrete. Discussions of the various theories of proportioning concrete mixes are conducted and studies made of the factors affecting the strength of concrete as produced in the laboratory and on the job. Laboratory operations are planned in such manner as to test these theories and factors. The course concludes with tests on brick as used in masonry construction.

Preparation ME 69

1½ semester hour credits

CI 21 Sanitary Engineering I

The course is designed primarily to be a lecture course supplemented by problems involving the following items of water supply engineering: the collection and assimilation of rainfall data; the methods of collection and storage for ground water or surface waters; the preparation of a dam site and the elements of design as applied to masonry and earth filled dams; methods of distributing water for domestic use, manufacturing, and for fire fighting; treatment of water for hardness; treatments of water to provide a palatable and safe water supply free from contamination. Consideration is given also to present day activities in regard to the improvement of water supply apparatus with special emphasis upon costs of installation, cost of apparatus, and total cost as applied to water supply engineering.

Pre-requisite: CI 11, CI 12

2 semester hour credits

CI 22 Sanitary Engineering II

This is a companion course to CI 21. It deals with the collection and disposal of sewage and storm water, including the following items: the quantity of sewage to be collected; the sewerage systems for either a separate or a combined system; the surveying and the collection of data in order to prepare plans for the design and the construction of the collection system; and a thorough discussion of the modern methods of treating the sewage and the operation of the sewage disposal plants.

Preparation: CI 21

2 semester hour credits

CI 23 Engineering Structures

The work begins with the analysis of bridge trusses having secondary web systems (including Baltimore and Petit trusses) and trusses with multiple web systems, lateral and portal bracing, transverse bents, viaduct towers and cantilever bridges.

A study is made of slope and deflection with emphasis on the methods of "Moment Area" and "Elastic Weights". The graphical solution of deflections as illustrated by the Williot-Mohr diagram is studied.

Pre-requisite: CI 15, CI 16, ME 23

3 semester hour credits

CI 24 Engineering Structures

The course consists of the study of simple, indeterminate structures of various kinds, continuous beams, rigid frames and trusses with redundant members. All the customary methods are developed and applied—the Three Moment Equation, Least Work, Slope-Deflection, and Moment Distribution.

Preparation: CI 23

3 semester hour credits

CI 25 Concrete

The fundamental principles involved in the theory of reinforced concrete design, as expressed in the transformed area method, are thoroughly reviewed and investigated. This is followed by the application of this theory to the analysis and design of elementary members such as the rectangular beam, the Tee beam, beams reinforced in compression and members subjected to combined direct stress and bending. Shear, diagonal tension, vertical and inclined stirrups, bond and anchorage are also treated. Some discussion of current standard practice and specifications is included.

Pre-requisite: ME 23, CI 18

2 semester hour credits

CI 26 Concrete

The material covered in CI 25 is co-ordinated and applied to the analysis and design of retaining walls, rectangular slabs supported on four sides and flat slab construction for one-half the time.

The balance of time is devoted to Foundation Engineering. A discussion of soil types and bearing capacities, sampling procedures and elementary soil mechanics principles is undertaken. The more common types of the various foundations, such as piles and pile driving, cofferdams, caissons (both open and pneumatic) pier foundations, bridge piers and their relation to the rest of the structure are included.

Preparation: CI 25

2 semester hour credits

CI 29 Design of Structures

The course consists of instruction in the design and detailing of simple structural members in steel, timber and concrete. Welding is also introduced. End connections for various types of structural

material are covered thoroughly, including rivets, bolts, welds and timber connectors. Concrete footings are designed and detailed.

Preparation: CI 23, 25

3 semester hour credits

CI 30 Design of Structures

In this course comprehensive problems in steel, concrete and timber are worked out by the class, each student using different design data. Such work as the design of highway bridges and continuous concrete beams have been assigned. A general drawing is made of one design problem.

Preparation: CI 24, 26, 29

3 semester hour credits

CI 31 Highway Engineering

The course includes development of modern highways, highway administration and finance; the preparation of the road foundation, drainage and drainage facilities. A discussion of soil classifications and tests as they pertain to modern highway design is undertaken. The economics of highway grades and a discussion of general layout features such as vertical curves, horizontal curves and superelevation, traffic surveys and control are also included.

Pre-requisite: CI 7, 9

2 semester hour credits

CI 32 Highway Engineering

This course is a continuation of CI 31, and covers more specific details of design, cost and construction of the various types of highways, the testing of bituminous materials and the application of laboratory tests and research to road construction and soil stabilization. The course concludes with a brief discussion of airport design and layouts.

Preparation: CI 31

2 semester hour credits

Drawing

D 1 Engineering Drawing

This course comprises a complete study of shape description in both orthographic and pictorial form. It provides a thorough foundation for the study of working drawings. The work is laid out according to the following divisions: care and use of instruments, lettering, geometric constructions including the conic, involute and cycloidal curves, orthographic projection including multiplanar and axonometric drawing, oblique and perspective projection, technical freehand sketching, development, screw-threads, sectioning, dimensioning, and tracing.

3 semester hour credits

D 2 Descriptive Geometry

This course comprises a complete study of the theory of projection. It is designed to develop the power to visualize and solve practical problems in spatial relations. In addition to point, line, and plane problems, the course includes a study of mining problems, graphic solution of stresses in framed structures, shadows, solid intersections, developable and warped surfaces.

Preparation: D 1

3 semester hour credits

D 3 Machine Drawing

A course similar to D 4 except that it is designed to be of particular value to students of electrical engineering.

Pre-requisite: D 1

2 semester hour credits

D 4 Machine Drawing

Detail working drawings of machine parts and assembly drawings of simple machines are made in accordance with best commercial practice. Such simple phases of mechanism as are necessary to a complete understanding of machine drawing are included in the course.

Pre-requisite: D 1

2 semester hour credits

English

E 1 English I

A course in composition with especial emphasis on exposition. Principles of grammar and rhetoric are reviewed rapidly but thoroughly. Contemporary essays are studied for their value both as models and as enrichment of the student's background. Themes on subjects largely drawn from or related to the student's life and study are a weekly requirement.

3 semester hour credits

E 2 English I

A continuation of E 1. Toward the end of the term a careful study is made of letter writing.

Preparation: E 1

3 semester hour credits

Economics

Ec 21 Economics

After an analysis of the main characteristics of our modern economic order, attention is turned to the fundamental economic laws and principles governing the production of economic goods, the organization of business enterprise, money, banking, the business cycle, control of the price level, and international trade. Case material is used freely.

2 semester hour credits

Ec 22 Economics

A continuation of Ec 21. The first part of the course deals with the principles of price determination under competitive and monopolistic conditions, and the principles underlying the distribution of wealth and income into wages, interest, and profits. Consideration is then given to the major aspects of the economic problems of agriculture, public utility regulation, labor, consumption, public finance, and economic reform.

Preparation: Ec 21

2 semester hour credits

Electrical Engineering

EL 1 Electrical Engineering I

This course deals with the fundamental principles of D.C. generators, generation of EMF, structural parts of dynamos, armature windings, armature reaction, commutation, ratings, methods of field excitation, and characteristics of shunt, series and compound generators.

Pre-requisite: P 2

1 semester hour credit

EL 2 Electrical Engineering I

This course is a continuation of EL 1. It deals with the operating principles of the shunt, series, and compound D.C. motors, including applications and control apparatus. The course also includes a study of elementary D.C. distribution systems.

Preparation: EL 1

1 semester hour credit

EL 5 Electrical Machinery

This course is concerned with the theory and application of the electrical equipment most often met by practicing engineers. Descriptions of the parts of the machines, their operating characteristics and of their special fields of usefulness are extended chiefly over shunt, series and compound direct current motors and generators, alternators, transformers, synchronous and induction motors. Consideration is given to auxiliary apparatus insofar as necessary to a good understanding of the functioning of the machinery as a whole.

Tests are made on various direct and alternating current machines. The object is to give the students facility in connecting and operating the machines as well as to observe in actual practice the characteristics taken up in the lectures. Outside reports are required to be written up for each experiment.

Pre-requisite: P 2

4 semester hour credits

EL 5A Electrical Machinery

This course is designed to meet the needs of the Chemical Engineering students insofar as their knowledge of elementary electrical engineering is concerned. Consideration is given chiefly to the study of motors, both D.C. and A.C., including their operating characteristics, control, and applications. Selection of motors and their duty cycles are also studied. The latter part of the course is devoted to the study of elementary vacuum tube theory, with emphasis on electronic control devices, involving the phototube, Thyatron, and other tubes applied to circuits used in the chemical engineering industry.

A laboratory course accompanies this lecture course, and study is made of both D.C. and A.C. motor operation and electronic control devices.

Pre-requisite P 2 and M 6

4 semester hour credits

EL 6 Electrical Measurements

The course comprises a brief study of measurements in general, and precision measure as applied to electrical measurements in particular. Resistance devices, galvanometers, ammeters, and voltmeters are next discussed, the treatment of other instruments being taken up later in connection with their use. This is followed by a detailed discussion of the methods of measuring various electrical quantities: resistance, resistivity, conductance; D.C. electromotive force, current, power, and energy; inductance, and magnetic induction. This part of the work involves the students' use of both visual and sound indicating devices. Some consideration is given to the principles and operation of vacuum tubes. Appropriate laboratory experiments are included.

Pre-requisite: EL 5

2½ semester hour credits

EL 9 Electrical Engineering II

A course designed to be an introduction to Alternating Current theory. Study is made of vector algebra and complex quantities as applied to A.C. work, elementary concepts, power, power factor, and energy relations, non-sinusoidal wave forms and analysis.

Pre-requisite: P 2

1½ semester hour credits

EL 10 Electrical Engineering II

A continuation of EL 9. This course deals with single phase, linear Alternating Current circuits, including series, parallel, series-parallel combinations, and Kirchhoff's laws, and introduces the concepts of inductance, impedance, susceptance, capacitance,

conductance and admittance. Resonant circuits, tuned circuits, transients in linear circuits, effective impedance, and filter circuits are also studied.

Preparation or taken concurrently: M 7

2 semester hour credits

EL 11 Electrical Engineering Laboratory

This is a laboratory course intended to develop a thorough understanding of the operating characteristics of the individual machines studied in courses EL 1 and EL 2, including work and experiments on armature and field resistance measurement, series and compound motors, and speed variations in a shunt motor. As it is also the purpose of this course to inculcate correct methods of work and preparation of preliminary and final reports, no definite number of experiments is required, but the utmost emphasis is placed upon the quality of the data, style, and content of the completed reports.

Pre-requisite: EL 2

1 semester hour credit

EL 12 Electrical Engineering Laboratory

This course continues the approach outlined in EL 11 and consists of experiments on heat runs, connection of D. C. generators, stray power testing and compound generator characteristics.

Preparation or taken concurrently: EL 10

1 semester hour credit

EL 13 Electrical Measurements I

This course is designed to acquaint the student with the theory of precision measure as applied to electrical measurement in particular. Some of the subjects covered are theory of measurements, directly and indirectly measured quantities, recording of observations, rules of significant figures, classification of error, law of error, characteristics of error, and laws of average deviation.

Most of the problems studied fall in the following two general classifications: (1) Given the precision measures of the directly measured quantities, to determine the precision measure of the indirectly measured quantity as calculated by the use of engineering equations which apply to measurements work. (2) Given the prescribed precision to be obtained in the indirectly measured quantity, to determine the precision measure of the directly measured components which enter into its calculation.

In this course parts and theory of operation of resistance devices, galvanometers, ammeters, and voltmeters are discussed, the treatment of other instruments being taken up later in connection with their use. This is followed by a detailed discussion of the methods of measuring various electrical quantities: resistance,

resistivity, conductance; D.C. electromotive force, current, power, and energy. This part of the work involves the students' use of visual indicating devices.

The principles taught in this course are immediately applied in all experiments run in the measurements laboratory and so far as necessary in the machine testing laboratory.

Preparation or taken concurrently: EL 9

2½ semester hour credits

EL 14 Electrical Measurements II

Resistance, capacitance, inductance, magnetic induction, A.C. power and energy are treated in this course, with a detailed discussion of the methods of measuring them. This phase of the subject involves the use of both visual and sound indicating devices, and includes some work on the uses of circuits and bridges designed for high frequency measurements and tube constant determination. The student is given a thorough discussion of the construction, theory of operation, method of use, sources of error, etc., of the types of measuring instruments used in commercial work and in standardizing laboratories.

Preparation: EL 13, taken concurrently: EL 10

2 semester hour credits

EL 17 Electrical Engineering III

This course is a continuation of Electrical Engineering II. It deals principally with polyphase circuits. Both balanced and unbalanced circuits are considered. The unbalanced condition is studied both by use of Kirchhoff's Laws and by the method of symmetrical phase components.

Pre-requisite: M 6, EL 10

2 semester hour credits

EL 18 Electrical Engineering III

A careful, thorough, and detailed study of the construction, theory, operating characteristics, and testing of transformers is the aim of this course. Particular attention is given to single phase and polyphase transformers used for power purposes. Special types of transformers studied include the constant current transformer, the auto-transformer, and instrument transformers.

Preparation: EL 17

2 semester hour credits

EL 19 Electrical Testing Laboratory

This course consists of a series of experiments involving the testing of machines. Preliminary reports are written by all students before the tests are performed in the laboratory. Experiments of the following type are used: measurement of stray load loss of D.C. motor, efficiency of machine by method of electrical supply of losses, electrical separation of losses, measurement of losses by retardation method, speed control of direct current motors by thyatron.

Preparation or taken concurrently: EL 17

2 semester hour credits

EL 20 Electronics Laboratory I

This course gives practical application of the material discussed in EL 21 and EL 22. The experiments are performed on power supplies, audio amplifiers, cathode-ray tube circuits, and intermediate-frequency transformers. Both sine wave and square wave testing of circuits is performed.

1½ semester hour credits

EL 21 Electronics

The first part of this course is concerned with the motion of charged particles in electric and magnetic fields with application to such devices as cathode-ray tubes, mass spectrograph, cyclotron, secondary emission multiplier, and the magnetron. Study is then made of non-self maintaining discharges, glow and arc discharges, thermionic emission, photo-electric emission, and characteristics of thermionic cathodes.

Pre-requisite: M 7, Preparation: P 2

1 semester hour credit

EL 22 Electronics

Continuing from EL21, this course takes up the principles of operation and applications of diode, triode, and multi-electrode vacuum tubes. Among the topics considered are paths of operation, dynamic characteristics, equivalent circuits, class A, B, and C amplifiers, analysis and design of audio amplifiers, oscillators, and measuring equipment.

Preparation: EL 21

2½ semester hour credits

EL 23 Electrical Measurements Laboratory

This course consists of a series of experiments emphasizing the principles developed in EL 13 and EL 14. The student becomes familiar with standard test apparatus and procedure. The experiments include the bridge measurement of D.C. and low frequency A.C. resistance, inductance, capacitance, measurement of E.M.F. by various methods, and experiments on networks involving both resonant and non-resonant conditions.

Preparation: EL 13 and 14

2 semester hour credits

EL 24 Advanced Measurements Laboratory

The experiments performed in this laboratory course are designed to give practice in more advanced methods of measurement and to give the student experience in using audio oscillators, vacuum tube voltmeters, cathode-ray oscilloscopes and similar equipment. The experiments include work on filters, artificial telephone line, audio transformer, harmonic analysis, wavemeter calibration, and radio frequency bridge measurements.

Preparation: EL 13 and 14

2 semester hour credits

EL 25 *Electrical Engineering IV*

In this course a detailed study is made of alternating current synchronous machines. In addition to the study of the synchronous generator and the synchronous motor, considerable time is spent in discussing the problems involved in operating synchronous generators in parallel.

Pre-requisite: EL 18

2½ semester hour credits

EL 26 *Electrical Engineering IV*

This course is a continuation of EL 25. It deals with other types of alternating current machines. The machines studied in detail include the synchronous converter, the mercury arc rectifier, single phase and polyphase induction motors, induction generators, series and repulsion motors. The method of symmetrical phase components is used in the study of unbalanced conditions in certain types of motors.

Preparation: EL 25

2½ semester hour credits

EL 27 *Advanced Electrical Engineering Laboratory*

This is a laboratory course in alternating current machinery. The work includes tests on the heating, efficiency, and determination of the characteristics of various types of alternating current machinery, such as transformers, generators, and motors. A detailed preliminary study is made of each assigned experiment, involving the method to be used in obtaining the necessary data and the manner of obtaining the required results from this data. This is embodied in a preliminary report. The student then does the necessary laboratory work to obtain the required data, and finally works up the whole into a detailed final report. A minimum of assistance is given by the instructor in the actual laboratory work, the initiative and resourcefulness of the student being depended on to the greatest extent.

Preparation or taken concurrently: EL 25

2 semester hour credits

EL 28 *Advanced Electronics Laboratory*

This course deals exclusively with measurements at radio frequencies including broadcast-band, short-wave, and ultra-high frequency. The apparatus used in experimentation includes a typical superheterodyne receiver, reactance modulator, frequency discriminator, detectors, class C amplifier, coaxial line matching networks, and klystron tubes.

Preparation: EL 37

Pre-requisite: EL 20, 22

Concurrent: EL 30, 32, 36

2 semester hour credits

EL 29 Electrical Engineering V-A

This course is based on the material covered in Electronics (EL 21 and 22) continuing into the field of radio engineering, taking up the following topics: power rectifiers, voltage and current regulators; amplification, audio frequency voltage amplifiers, class A and B audio frequency amplifiers, radio frequency class A, wide band amplifiers, class B and C radio frequency power amplifiers; oscillators (sine wave), negative-resistance oscillators, principles of operation, feed back oscillators, frequency stabilized and beat frequency oscillators.

Pre-requisite: EL 21 and 22

2 semester hour credits

EL 30 Electrical Engineering V-A

The field covered by this course includes two main parts: radiation and transmission lines as utilized at radio frequencies; the main topics being fundamental theory, fields set up by a straight wire, finite-length antennae, arrays and reflecting systems, receiving antennae, transmission lines, modified conventional transmission line theory to fit the radio frequency applications, transmission of energy on R-F lines, transmission lines as circuit elements, transmission lines as impedance matching device, transmission lines as a measuring device, transmission line practice.

Preparation or concurrently: EL 29 and 32

2 semester hour credits

EL 31 Electrical Engineering V-B

This course, which is given during the first semester of the senior year (after a very brief consideration of the principles of hyperbolic trigonometry), opens with a discussion of the fundamental theory of the long distance transmission line, and continues with the methods of determining voltage and current distribution along the line with boundary conditions known at either the sending or the receiving end, in both the case of a uniform line and that of the composite line. Attention is given to the special cases of the distortionless and dissipationless lines; equivalent T and Pi representations; reflected waves. Half and quarter wave lines with consideration of the latter as a transformer conclude the course.

Preparation: M 7

2 semester hour credits

EL 32 Electrical Engineering V-B

This course, a continuation of EL 31, given in the second semester of the senior year begins with a discussion of important network theorems, resonance and resonant arms of various types, Foster's reactance theorem, insertion loss, impedance matching

and the ideal transformer; followed by a thorough discussion of filters both "constant K" and "m-derived," of low- and high-pass, band-pass and band-elimination types. The course closes with a brief review of the use of Fourier's series so far as seems desirable; and the analysis of transients by the use of Fourier's integral.

Preparation: EL 31

2 semester hour credits

EL 35 Ultra High Frequency Technique

The material covered by this course embraces the four main headings: cathode ray tube and circuits, modulation, demodulation and receivers. The subdivisions are as follows: cathode ray tubes and circuits, electron guns and beam formation, trigger circuits, relaxation oscillator, time base and sweep circuits, special circuits, combination of circuits; modulation, amplitude and frequency modulation, amplitude modulation circuits, frequency modulation circuits; receivers, receiver characteristics, sources of noise, tuned R-F receivers, superheterodyne receiver, regenerative and super-regenerative receiver, frequency modulated receiver.

Preparation or concurrently: EL 29, 31

2 semester hour credits

EL 36 Ultra High Frequency Technique

The basic material covered may be subdivided into four general classifications: transmitters, U.H.F. generators, propagation, and wave guides. The subdivision of these are transmitters, classification, conventional transmitter circuits, frequency modulation systems, transceivers, microphones; ultra-high-frequency generators, frequency limits, ultra-high-frequency negative-grid oscillator, positive grid oscillator, velocity-modulation tubes and circuits, magnetrons; propagation, general nature of propagation and dependence on frequency; wave guides, propagation through rectangular and round guides, resonance phenomena in wave guides, applications of resonant elements, practical utilization of wave guides.

Preparation or concurrently: EL 32, 35

2 semester hour credits

EL 37 Electronics Laboratory II

The experiments in this course are of a more advanced nature than those of EL 20 and are concerned with circuit applications of vacuum and gas-filled tubes. The circuits covered are feedback amplifier, regulated power supply, resistance-capacitance oscillator, self-excited oscillator, multivibrator, trigger circuits, and amplitude modulation circuits.

Preparation: EL 20

Pre-requisite: EL 21, 22

Concurrent: EL 29, 31, 35

1½ semester hour credits

EL 38 Ultra High Frequency Technique Laboratory

The experiments in this group are designed to acquaint the student with equipment and techniques used in high-frequency and ultra-high frequency work. The equipment used consists of resonant line oscillators, antenna field pattern equipment, ultra-high frequency generators (10 cm.), wave guides and associated equipment, horns and parabolas.

Preparation: EL 29, 37

Pre-requisite: EL 20, 22

Concurrent: EL 30, 32, 36

1½ semester hour credits

Geology

Gy 1 General Geology

A study of earth movements and various terrestrial applications of solar energy. Lectures on fundamental general facts as to origin and movements of the earth, weathering, work of winds, underground and surface waters, glaciers and the glacial period, lakes and swamps, and vulcanism.

2 semester hour credits

Gy 2 General Geology

Course Gy 1 is continued with such topics as mountain formation, oceanic life, atmosphere, and meteorology. A considerable portion of time is given to the study of igneous, sedimentary and metamorphic rocks, supplemented by laboratory and field work.

Preparation: Gy 1

2 semester hour credits

Industrial Engineering

IN 3 Production Processes I

A course in the techniques, processes, and machines used in the production of manufactured articles.

The subject matter is presented in lectures supplemented by slides, exhibits, and demonstrations. The processes covered are heat-treating, forging, welding, foundry practice, and die casting. The metallurgical principles involved are correlated with good shop practice in each case.

The construction nomenclature, and operation of the following machine tools are discussed: lathe, milling machine, planer, shaper, broaching machine, and grinder.

2½ semester hour credits

IN 4 Production Processes II

This course is designed to apply economic principles to actual manufacturing situations and to acquaint the student with the proper angles, speeds, and feeds for metal cutting tools.

Typical problems considered are: the selection of the most economical material for a certain product, calculation of the minimum cost quantity in purchasing, determination of whether to use machine or hand labor for a given operation, and consideration of the cost factors involved in jig and fixture design.

The proper shapes, speeds, and feeds of the following cutting tools are discussed: milling cutter, broach, drill, lathe tool, and threading tools.

1½ semester hour credits

IN 5 Industrial Management I

The course in Industrial Management places emphasis on the administrative phases of factory and plant operation. It deals with the location of the plant; plant design, structure, and services; plant layout; standardization, simplification, and specialization; and the public relations of industry.

2 semester hour credits

IN 6 Industrial Management II

This course is a continuation of IN 5. It deals with the control of plant operations. Each department of a modern industrial concern is considered, emphasis being placed on the organization and management problems confronted and how they may be handled, with the intention that the student shall become familiar with the activities and general working of each department and the relationship which the departments hold to one another and to the business as a whole. In detail are considered: budgeting, standards of performance, wage systems, organization, routing, scheduling, dispatching, inventory control, quality control, and visual controls such as the organization chart, planning board, and departmental report. Considerable attention is given to the distribution of overhead expenses and standard costs.

Preparation: IN 5

2 semester hour credits

IN 7 Industrial Accounting

This is a course designed to introduce the engineering student to the methods of analyzing and recording business transactions on the books of original entry and their classification in the ledger accounts. The purpose and use of the trial balance, the work sheet and the construction and analysis of the balance sheet and profit and loss statement are demonstrated by specific problems.

2 semester hour credits

IN 8 Industrial Accounting

A continuation of IN 7 demonstrating the application of fundamental accounting principles to the particular problems involved in the several forms of business organization. The specific problems considered cover the partnership, corporation, and manufacturing organization.

Preparation: IN 7

2 semester hour credits

IN 9 Cost Accounting

The primary purpose of this course is to establish an understanding of the basic purpose of cost accounting as a measure of operating efficiency.

The fundamental principles of cost accounting procedure are developed through the demonstration of accounting control of material, labor, and factory expenses together with the methods by which the factory operations are tied in with the financial records of the business organization. Specific problems in job order and process costs are studied in detail.

Pre-requisite: IN 8

2½ semester hour credits

IN 10 Cost Accounting

This a continuation of IN 9 and deals with the application of the basic principles to specific cost accounting systems and budgetary control.

Predetermined standard, estimated and associative cost systems are discussed and illustrated.

Preparation: IN 9

2½ semester hour credits

IN 11 Methods Engineering

This course comprises (1) a detailed study of time and motion study work; (2) a complete study and actual practice in micro-motion which is the use of motion pictures in the motion study work; (3) the preparation of simo-charts (the use of colored charts and symbols called Therbligs) which show all the elements in an operation cycle; (4) the making of process charts which is the use of specifically designed symbols, or industrial shorthand, to record motion analysis.

Pre-requisite: IN 6

2½ semester hour credits

IN 14 *Industrial Finance*

The course in Industrial Finance is divided into two parts; the first half of the course presents the differences in the organization of partnerships, corporations, individual proprietorships, joint-stock companies, and holding companies.

The second half of the course deals with problems of financial analysis. Industries are examined to determine their financial condition; their position in relation to similar concerns; the proportion of their fixed and variable expenditures; and the effect of price cutting and price changes on their sales volume, costs, and capital structure. Care is taken to give the student a basis for determining what constitutes sound financial policy for any industrial enterprise.

2½ semester hour credits

IN 15 *Sales Engineering*

This course in the principles of marketing is designed to acquaint the engineering student with the field of distribution. It includes a complete study of the functions of marketing, the institutions and middle-men of the market, a study of the trade channels used to market specific commodities, placing particular emphasis on industrial goods.

2 semester hour credits

IN 17 *Personnel Administration*

This course presents the basic principles underlying the organization and operation of a modern department of personnel administration. The topics covered deal with selection, placement, guidance, training, wage and salary administration (job evaluation principles and merit rating as used to determine wages and salaries), safety, and health. In order to give the student a clear appreciation of the fundamentals of jobs and what they require, the course begins with the presentation of the basic principles of job evaluation. This is followed by treatment of merit rating. At this point the student has an appreciation of the requirements of the job and is better able to understand basic principles of selection. The balance of the course deals with training, safety, and health.

3 semester hour credits

IN 22 *Contracts*

Preparation for a career as an industrial engineer demands an understanding of the fundamental legal principles upon which modern business transactions are based. The course in Contracts treats of the common law rules which underlie all branches of

business law. The study of cases and decisions is supplemented by lectures and assigned readings in textbooks in order to develop a thorough understanding of the essentials of a valid contract such as offer and acceptance, consideration and form. The interpretation, operation and discharge of contracts are also considered. Such topics as agreement, competent parties, reality of consent, legality of object, sealed instruments, and the Statute of Frauds are treated in detail.

2 semester hour credits

IN 23 Industrial Statistics

The increasing use of statistics in business and in the field of industrial engineering makes essential an understanding of the fundamental methods and applications of statistical analysis. In this course the important topics considered include the following: the collection of statistical data; the presentation of statistical data in tabular and graphic forms; and the uses and construction of frequency distributions, averages, measures of dispersion and skewness, and the normal curve. Specific attention is given to the practical uses and limitations of statistics in the work of the industrial engineer.

2½ semester hour credits

IN 24 Industrial Statistics

Time series analysis receives major consideration, in this course. The standard procedures for measuring, separating, and eliminating trend, periodic, seasonal, cyclical, and irregular movements of time series are carefully studied. Each student is required to analyze a time series related to his co-operative employment or to a field of industry in which he has especial interest. The construction of index numbers, the use of currently published index numbers, correlation, and business forecasting complete the course content. Particular regard is paid to the internal use of statistics in industrial concerns.

2½ semester hour credits

IN 28 Motion and Time Study

This is an introductory course in work simplification and time study. It includes a study of process charts, operation analysis, motion economy, proper work place layout, use of labor saving tools and equipment, use of the stop watch, rate setting, fatigue studies and allowances, and effects upon employee morale. Motion pictures are used and actual laboratory studies made of simple assembly operations.

3 semester hour credits

IN 30 *Technique of Executive Control*

The problems of human relations in industry are considered from the point of view of building and maintaining employee morale. Topics to be discussed include: the nature of executive responsibilities, methods of control in dealing with the working group, devices for stimulating the employee toward improvement in the quantity and quality of his work, a study of the common executive difficulties in dealing with subordinates, associates, and superiors.

3 semester hour credits

Mathematics

M 1 *College Algebra*

The study of algebra is scheduled to begin with the solution of the quadratic equation, simultaneous quadratics, and equations in quadratic form. However, a rapid although thorough review of the fundamentals of algebra precedes this. This solution of the quadratic is followed by a detailed study of the theory of exponents. Then follow radicals, series, variation, inequalities, and the elementary principles of the theory of equations. Considerable time is given to plotting and the use of graphs in the solution of equations. The elementary theory of complex numbers is also covered.

3 semester hour credits

M 3 *Trigonometry*

This is a complete course in trigonometry and should enable the student to use all branches of elementary trigonometry both in the solution of triangles as well as in the more advanced courses where the knowledge of trigonometry is essential. Some of the topics covered are: the trigonometric ratios; inverse functions; goniometry; logarithms; circular measure; laws of sines; cosines; tangents, half angles; solution of oblique and right triangles; transformation and solution of trigonometric and logarithmic equations. Considerable practice in calculation of practical problems enables the student to apply his trigonometry to problems arising in engineering practice at an early stage. Additional work, graphical and algebraic, is done with the complex number, introducing DeMoivre's theorem, and the exponential form of the complex number.

2 semester hour credits

M 4 *Analytic Geometry and Introduction to Calculus*

This being a basic course in preparation for any further study of mathematics, it requires a thorough knowledge of the fundamentals of algebra. The course covers cartesian and polar coordinates; graphs; the equations of simpler curves derived from their geometric properties; thorough study of straight lines, circles, and conic sections; intersections of curves; transformation of axes; plotting and solution of algebraic equations of higher order and of exponential, trigonometric, and logarithmic equations; loci problems. The general equation of the second degree is thoroughly analyzed in the study of conic sections. Some time is devoted to curve fitting from empirical data.

Explicit and implicit functions, dependent and independent variables, some theory of limits, continuity and discontinuity are given special attention both from the algebraic as well as geometric points of view. Some theorems on the infinitesimal are introduced and a study is made of infinity and zero as limits. Relative rates of change, both average and instantaneous, and the meaning of the slope of a curve follow. The differential and the derivative as applied to algebraic functions with the geometric interpretation is then studied. Simple applications with interesting practical problems help to develop interest here and lay a solid foundation for the study of the calculus. The introduction of the differential at the same time with the derivative helps considerably to bridge the large gap which usually exists when the student passes from the study of the elementary analytic geometry to the infinitesimal of calculus.

Preparation: M 1, 3

5 semester hour credits

M 5 *Differential Calculus*

The differential is introduced and defined at the outset of the course together with the derivative; geometric and practical illustrations are given of both; and both are carried along throughout the course. The work in the course consists of differentiation of algebraic, trigonometric, exponential, and logarithmic functions, both explicit and implicit; slopes of curves, maxima and minima with applied problems; partial differentiation; derivatives of higher order; curvature; points of inflection; related rates; velocities, acceleration; expansion of functions; series. Although the subject matter deals with considerable theory, constant sight is kept of the practical application of the theory. The geometric interpretation of every new subject is carefully defined and problems are continually solved dealing in practical applications of the theory in geometry, physics, and mechanics.

Pre-requisite: M 1

Preparation: M 4

3 semester hour credits

M 6 *Integral Calculus*

This is a continuation of Calculus M 5, and deals with integration as the inverse of differentiation as well as the limit of summation. The topics covered are methods of integration; use of integral tables; definite integrals; double and triple integrals; areas in rectangular and polar co-ordinates; center of gravity; moment of inertia; length of curves; volumes of solids; areas of surfaces of revolution; volumes by triple integration; practical problems in work, pressure, etc., depending on the differential and integral calculus for solution, solution of simpler differential equations.

Preparation: M 5

3 semester hour credits

M 7 *Differential Equations*

The elementary theory of differential equations and the solution of certain ordinary and partial differential equations is offered here as a general course in mathematics. Although principally a problem course in solving differential equations, properties of the equations and of their solutions are deduced, and applications to the various fields of engineering, particularly electrical engineering, are analyzed.

Preparation: M 6

2½ semester hour credits

Mechanical Engineering

ME 1 *Mechanism*

This course deals mainly with a mathematical solution of problems involving angular and linear velocities and gear trains. It embraces a careful study of paths of mechanical movements and their application to velocity diagrams, quick-return mechanisms, and cams. The theory of gear tooth outlines is also investigated by graphical methods.

3 semester hour credits

ME 15 *Industrial Plants*

The principles involved in the erection, installation, and management of an industrial plant are studied in this course. Various types of structures are described, with attention to such details as foundations, walls, columns, floors, and windows. The calculations and layout for a typical mill are also discussed. This material is followed by a problem on the calculation and layout of a machine

shop, including power requirements and placement of machines, with special consideration to the best conditions for maximum production and the most effective routing of a given product.

Preparation: ME 23, ME 32

2½ semester hour credits

ME 16 *Industrial Plants*

This course, a continuation of ME 15, includes a problem on the heating and air-conditioning of a building, and a design problem on the calculation and layout of a power plant. Sizes of equipment, costs of power generation, and various operating practices are discussed and worked out. The later problems of the course have to do with the layout of the power plant previously figured.

Preparation: ME 15

2½ semester hour credits

ME 20 *Applied Mechanics (Statics)*

The subjects treated are collinear, parallel, concurrent, and non-concurrent force systems in a plane and in space; the determination of the resultant of such systems by both algebraic and graphical means, special emphasis being placed on the string polygon method for coplanar force systems; the forces required to produce equilibrium in such systems; first moments; and problems involving static friction, such as the inclined plane and the wedge.

Pre-requisite: P 1

3 semester hour credits

ME 21 *Applied Mechanics (Kinetics)*

The subjects treated are continuation of first moments as applied to varying intensity of force and to the determination of center of gravities of areas and solids; second moments and the application to the determination of moment of inertia of plane and solid figures, radius of gyration, polar moment of inertia; product of inertia principal axes, uniform motion, uniformly accelerated motion, variable accelerated motion, harmonic motion, simple pendulum, rotation, plane motion, work, energy, momentum and impact.

Preparation: ME 20

3 semester hour credits

ME 22 *Strength of Materials*

The topics covered in this course are physical properties of materials, stresses in thin hollow cylinders and spheres, riveted connections of the structural and continuous plate type, welded connections, and beams, covering shearing force and bending moment with stress analysis due to these effects and the design of beams for both conditions.

Pre-requisite: ME 20

3 semester hour credits

Preparation: ME 21, P 4

ME 23 *Strength of Materials*

This is a continuation of ME 22 covering deflection of beams by the double integration method; stresses and strains in shafting due to torsion, angle of twist; horsepower; combined axial and bending loads, eccentric loads; compression members or columns by Euler's column formula, and by those of the Gordon-Rankine parabolic and straight line type.

Pre-requisite: ME 22

2 semester hour credits

ME 24 *Advanced Mechanics*

Advanced problems in the strength of materials and dynamics are treated. Among the subjects under discussion are non-symmetrical bending, curved bars, flat plates, thick hollow cylinders, dynamical stresses in machine parts, and allied subjects leading to the more advanced applications of mechanics in machine design, the elastic theory, and photoelasticity.

Preparation: ME 23

2 semester hour credits

ME 25 *Strength of Materials*

Continuation of ME 22 covering deflection of beams by the double integration method, stresses and strains in shafting due to torsion; horsepower; combined axial and bending loads, eccentric loads, impulse, impact and momentum; the catenary and other problems of interest to electrical students.

Preparation: ME 22

1½ semester hour credits

ME 27 *Metallography*

The course in metallography is intended to show the student the relation between the crystalline structure of metals and their physical properties.

The theory of crystallization and the equilibrium diagram are studied. Specimens of metal of known composition are polished, etched, and studied by use of the metallograph, and their physical properties are compared. The effect of heat treatment on the crystalline structure is noted.

Preparation: IN 3

2 semester hour credits

ME 29 *Heat Engineering (Power Plant Equipment)*

The course is largely a description of the many appliances used in modern power plants. There is also taken up a discussion of boilers and boiler accessories, ash and coal handling systems, the various types of engines with their valve gears and governing devices, condensers, feed-water heaters, pumps, etc.

2 semester hour credits

ME 30 Heat Engineering (Thermodynamics)

In this introductory course in the fundamentals of thermodynamics the following subjects are discussed: general theory of heat and matter; first and second laws of thermodynamics; equations of state; fundamental equations of thermodynamics; laws of perfect gases; properties of vapors including development and use of tables and charts; thermodynamic processes of gases, and saturated and superheated vapors; and the general equations for the flow of fluids.

Preparation: P 4

3 semester hour credits

ME 31 Heat Engineering

The principles of thermodynamics are here applied to various problems of heat engineering. These include the fundamental laws governing the flow of gases and vapors through nozzles and orifices with and without friction; the theory of vapor engines, including discussions of the Rankine, the reheating, the regenerative and the binary vapor cycles; the efficiencies and power calculations for actual steam engines; and the principles of heat transfer as applied to steady flow conditions and their applications to practical problems.

Pre-requisite: ME 30

2½ semester hour credits

Preparation: ME 29

ME 32 Heat Engineering

In this course the single and multistage compressor cycles are studied and analyzed. Various types of modern internal combustion engines are taken up in detail, including the latest designs of automobile, airplane, and Diesel engines. Considerable stress is placed on the combustion process of power plants and internal combustion engines.

The Otto and Diesel cycles are carefully analyzed to determine how changes in pressures, compression ratios, clearances, and fuel cutoff effect the economy and performance of the engine.

Solid and air injection, high, medium, and low speed engines are also discussed.

Preparation: ME 31

2½ semester hour credits

ME 33 Refrigeration

A discussion is given of the history, theory, equipment, and applications of refrigeration. The properties and hazards of the various refrigerants; the simple and compound compression cycle; the absorption system; the jet or vapor system; devices for improving theoretical and operating performance of machines are among the topics considered.

Preparation: ME 32

2 semester hour credits

ME 34 *Steam Turbines*

A study is first made of the flow of steam through nozzles, dynamic action of jets on moving blades, and other elements in the design of a steam turbine. This material is followed by a consideration of the various types of turbines, their governing mechanisms, condensing equipment, and other constructional details.

Preparation: ME 31

2 semester hour credits

ME 35 *Heat Engineering*

This is a short course covering the elements of thermodynamics and affording a general discussion of modern power plant equipment. Many typical calculations are made in regard to apparatus.

Preparation: P 4

2 semester hour credits

ME 36 *Heat Engineering*

A continuation of ME 35, together with experimental work in the laboratory. Topics taken up in class include steam engine economy, multi-valve and multi-expansion engines, steam turbines, steam condensing equipment, pumps, and internal combustion engines.

In the laboratory, experiments are performed on air blowers, steam engines, water wheels, pumps, and internal combustion engines.

Preparation: ME 35

2½ semester hour credits

ME 39 *Engine Dynamics*

A consideration of the vibrations, balancing, critical speeds, and inertia effects of high speed internal combustion engines.

Pre-requisite: ME 21

2½ semester hour credits

ME 40 *Aerodynamics*

The course comprises a study of the fundamental theory of aerodynamics which underlies all calculations concerning the performance and stability of airplanes including characteristics of airfoils and elementary propeller theory.

Preparation: ME 21, CI 12

2 semester hour credits

ME 42 *Heating and Air Conditioning*

The most important methods of heating and air conditioning various types of buildings are studied in this course. The principles of heat transfer and air flow are reviewed, and the application of them in the various systems is brought out through lectures and problems.

Preparation: ME 21, CI 12

2 semester hour credits

ME 44 *Power Plant Engineering*

This course consists of topics and problems chosen largely from engineering practice selected to convey to the engineering students a firm grasp of fundamental principles and engineering methods of attacking and analyzing problems in power plant, not only from the point of view of scientific theory, but also with due consideration of the limitations imposed by practice and by costs. Efficiency and operating costs of different types of plants such as steam, hydro-electric, and Diesel engines are also carefully studied to determine the type of plant best suited for the conditions and location involved.

Preparation: ME 32

2½ semester hour credits

ME 51 *Machine Design*

Further practice is given the student in the application of theoretical principles previously studied, and at the same time he becomes familiar with the many practical details which must be considered in design work. The problems taken up in the early part of the course are of a static nature, while the later problems involve dynamical stresses. The problems vary from year to year, but the following are typical of the designs taken up: hydraulic press, arbor press, hydraulic flanging clamp, crane, air compressor, punch and shear, stone-crusher, and so forth.

In each design, the construction details are carefully considered, with special attention to methods of manufacture, provision for wear, lubrication, and so forth. The work is based on rational rather than empirical methods, the student being required to make all calculations for determining the sizes of the various parts and all necessary working drawings.

Preparation: ME 24

3 semester hour credits

ME 52 *Machine Design*

This course comprises a continuation of Machine Design ME 51 with special reference to designs involving dynamical stresses. A thorough discussion of the principles and methods of lubrication forms a part of the course.

Preparation: ME 51

3 semester hour credit

ME 61 *Mechanical Engineering Laboratory*

This course comprises a preliminary series of experiments upon various apparatus used in modern power plants, to illustrate under actual conditions the principles developed in Heat Engineering ME 30. These exercises are a preparation for more complete tests to be run during the following semester.

The knowledge they have gained in the classroom, the students here apply in actual tests, and make a complete report of these experiments, including methods of testing and calculations. The following experiments are illustrative of the type of work taken up; calibration of gauges, indicator practice, plain slide valve setting, test on steam calorimeters, flow of steam through orifices, steam injector test, weir calibration, and tests on friction of drives.

Pre-requisite: ME 29

2 semester hour credits

Preparation: ME 31

ME 62 *Mechanical Engineering Laboratory*

This course consists of a series of tests on various types of power plant equipment, more complete than those made in ME 61. Among the pieces of apparatus tested are the following: steam engine, gasoline engine, air compressor, triplex power pump, steam pulsometer, rotary power pump, Pelton water wheel, centrifugal pumps, Ford gasoline engine, Warren steam pump and steam turbine. Experiments are also made in flow of water measurements and flow of air.

A complete report is made on each test, describing the machine tested, explaining how the test is made, and giving the results, in accordance with the A.S.M.E. Power Test Codes.

Preparation: ME 32, 61

2 semester hour credits

ME 63 *Mechanical Engineering Laboratory*

This is a continuation of course ME 62, to which it is generally similar. Some further experiments are made in the testing of materials, such as compressive, tensile, torsion, impact, and bending tests. A boiler test of from ten to twenty-four hours' duration is made to determine the performance and efficiency of the boilers in the power plant; and oils and coals are tested in the laboratory to determine their characteristics and calorific values.

Preparation ME 32, 62

2½ semester hour credits

ME 69 *Testing Materials Laboratory*

Methods of testing and strength of various materials used by the engineer are taken up.

The work of this course is carried out by the students, working in small groups. It includes tests to determine the elongation, reduction of areas, modulus of elasticity, yield point, and ultimate compressive strength of metals such as steel, cast iron, copper, and brass; compressive tests on timber and concrete, and tests to determine the deflection, modulus of elasticity, elastic limit, and ultimate transverse strength of steel and wooden beams subject to transverse load. Torsion and impact tests are carried out and their results correlated with those of the tensile tests.

The effect of various mixes and curing conditions on the tensile and transverse strength of cement and mortar are studied. Special problems are assigned in the failure of metals by fatigue.

Preparation: ME 22

1½ semester hour credits

ME 73 *Aircraft Structures*

The fundamental analysis of the forces, reactions, shears, and moments as applied to aircraft structures is the object of this course.

Preparation: ME 23

2 semester hour credits

ME 74 *Aircraft Structures*

This course deals with the structural analysis of the metal airplane. Among the topics discussed are the stability of the short column, stability of thin plates under different loading conditions, shear centers, and redundant structures. The rigid web, tension field, and truss types of spar design are considered.

2 semester hour credits

ME 76 *Aircraft Engine Design*

This course covers the design of an airplane engine involving the thermodynamic principles as well as the stresses in the crankshaft, connecting rods, cylinders, springs, and other parts of the engine.

Preparation: ME 39

2½ semester hour credits

Physics

P 1 Physics I

A course in the study of the fundamental principles of the mechanics of physics. Some of the topics covered are simple harmonic motion, uniformly accelerated motion, friction, work, energy, power, fluid pressure, angular velocity, centripetal force, equilibrium under the action of a series of parallel forces and equilibrium under the action of concurrent forces.

3 semester hour credits

P 2 Physics I

This is a thorough course in magnetism and electricity covering all the details within the scope of standard college texts on these subjects. All lectures are illustrated by means of lantern slides, motion pictures, and special apparatus.

3 semester hour credits

P 3 Physics II

A course in the study of wave motion, sound, and light. Molecular mechanics and other fundamental principles of physics are stressed at the beginning.

All lectures in physics are accompanied by appropriate demonstrations.

Preparation: P 1, 2

2 semester hour credits

P 4 Physics II

The topics studied are thermometry, expansion of solids, liquids, and gases; calorimetry; change of state including latent heat of fusion and vaporization (sublimation); triple point diagram; conduction and radiation; and the mechanical equivalent of heat.

Preparation: P 1, 2

2 semester hour credits

P 5 Physics Laboratory

This course consists of experiments in mechanics, light, electricity, and magnetism performed by each student supplementing the lecture and class room work of courses P 1, P 2, and P 3. The experiments on mechanics include: the use of the vernier, micrometers and spherometer, the calculation of true weights, the funicular polygon, gyroscopic motion, simple harmonic motion and the determination of areas by means of the planimeter. Other experiments in this course include plotting the magnetic field about a

bar magnet and the determination of the pole strength and field strength of the magnet, the position of images in a combination of lenses and one experiment on electrostatics.

Preparation: P 1, 2

1 semester hour credit

P 6 Physics Laboratory

A continuation of the experiments started in P 5 including experiments on sound and heat. Some of the experiments of this course are: the modulus of elasticity, the determination of the velocity of sound, the coefficient of cubical expansion of mercury, the air thermometer, the determination of the mechanical equivalent of heat, the study of the maximum and minimum thermometers, and the use of the spectroscope in the study of the bright line and solar spectra. The experiments of this course supplement the class work of courses P 1, P 2, P 3, and P 4.

Preparation: P 1, 2

1 semester hour credit

P 7 Physics Laboratory

This course is very similar to P 5 but broader in scope and designed particularly for electrical engineering students.

Preparation: P 1, 2

2 semester hour credits

P 8 Physics Laboratory

A course similar in content but broader in scope than P 6 and designed particularly for electrical engineering students.

Preparation: P 1, 2

2 semester hour credits

Physical Education

PE 1 Hygiene

One class hour a week is devoted to the study of information closely related to the Physical Training work and to personal and mental hygiene. For each class lecture, the student is assigned at least one hour of outside study based on the required textbook. The course includes enough of the fundamentals of physiology and anatomy to enable the student to understand such parts of the course as require some knowledge of these subjects.

1 semester hour credit

Physical Training

All first year students are required to take Physical Training. Health, strength, and vitality do not come by chance, but by constant attention to those factors involved in their development. It is very essential for the student to acquire good habits of living.

The work in the course includes a formal calisthenic program, special exercise classes for the correction of postural defects, participation in the regular athletic program, including baseball, basketball, football, hockey, track, and many types of informal games. All members of the class are also required to learn to swim.

Students wishing to be excused from Physical Training because of physical defects are required to present a petition to the faculty supported by a physician's certificate.

No credit

Orientation

This course is required of all first year students and is designed to make the entering student explicitly aware of those facts, principles, and techniques which are significantly related to the maintenance of his intellectual efficiency, to assist him in making desirable social adjustments in the college community, to help him make a wise choice in his upperclass field of specialization. Special effort is made to prepare the student to make an early and satisfactory adjustment to the conditions of the co-operative work. Lectures and individual conferences.

No credit

Sociology

S 1 Introduction to Sociology

In presenting a survey of the origins and sources of human society, this study provides orientation for the course in principles and problems which follows. The several theories of organic evolution are discussed. The antiquity of man and basic anthropological data are considered. The racial and ethnic groupings of man are then studied in the light of biological, geographical, and cultural factors.

2 semester hour credits

S 2 Principles of Sociology

Facts and principles basic to a general knowledge of the field of sociology are presented. The origins, forms, and forces of human associations are discussed. A study is made of the principal socio-political groups such as socialism, communism, fascism, and democracy. The course is practical in emphasis and is designed to meet the needs of the student who desires a survey of the subject.

2 semester hour credits

Thesis

Theses are not required of candidates for the bachelor's degree. Certain students, who have demonstrated marked ability in the field of research, may be permitted to substitute a thesis for one or more courses of the senior year.

By "thesis" is meant an essay involving the statement, analysis, and solution of some problem in pure or applied science. Its purpose is to demonstrate a satisfactory degree of initiative and power of original thought and work on the part of each candidate for an engineering degree.

The subject of the thesis is to be decided in conference between the candidate and that faculty member of the professional department to whom he is assigned for supervision in thesis work; final approval, however, resting with the head of the department. The subject may be one of structural design, research, testing, study of a commercial process, etc., but in no case will a mere résumé of prior knowledge or discussion, either or both, of the present state of the matter be acceptable. This, it is true, must normally be made, but in addition thereto there must be a certain amount of work planned and executed, aimed toward the extension of the present field of information regarding the subject chosen.

In many cases the student presents an individual thesis. However, in nearly equal number, acceptable subjects will be found necessitating the co-operation of at least two men, either of the same or sometimes of different professional departments. In such cases, each man is primarily responsible for a certain part of the work, while also making himself wholly familiar with the entire problem; and the completed thesis must show clear evidence of the evenly-balanced co-operation and labor of the men concerned.

The completed thesis will be examined for acceptance or rejection from the technical viewpoint by the professional departments interested, and then forwarded to the Secretary of the Faculty, final approval of the thesis resting with the Dean of the College involved.

Upon acceptance, the thesis becomes the property of the University, together with all apparatus and material used in connection therewith, except that hired or borrowed, or originally the personal property of the candidate. It is not to be printed, published, nor in any other way made public except in such manner as the professional department and the Dean shall jointly approve.

Frequently thesis subjects may be chosen on problems arising in the plant where the student is employed at co-operative work. Employers are usually glad to consult with the student in the selection of the subject and the subsequent development of the thesis.

When theses are conducted in this manner, it is understood that the employer is not expected by the University to assume

any expense of the thesis nor to furnish any supplies or equipment to be used in the development of the thesis other than those which he may consider it advisable and desirable to place at the disposal of the students. The regulations governing the use of laboratories and buildings of the co-operating firms will vary in practically all cases and each student must naturally be governed definitely by the regulations existing at the plant where the thesis is to be conducted.

It is understood that the thesis work must not in any way interfere with the regular required co-operative work and must be done during hours distinctly outside of regular co-operative work hours unless special request is made by the co-operating firm for some other arrangement.

Theses conducted in conjunction with co-operating firms must be submitted in duplicate, one copy to be presented by the Director of Co-operative Work to the co-operating employer.

For all further information, the candidate for the degree is referred to the "Directions for Theses", which he may obtain from his professional department at the end of his junior year.

NORTHEASTERN UNIVERSITY

Courses of Instruction Offered in the Day Colleges

Certain of the courses here listed are offered only in alternate years, and the University reserves the right to withdraw any course in which there is insufficient enrollment.

Courses not included in the prescribed curricula may be taken only after approval by the student's faculty adviser. Except where otherwise indicated, electives are not open to freshmen.

Pre-requisite courses are divided into two groups. Those courses printed in type (AC2) must have been completed with passing grades before a student will be permitted to register for the advanced courses to which they apply. Those courses printed in (B3) are of such a preparatory nature that a student undertaking an advanced course without having had the preparatory courses specified, will ordinarily find himself greatly handicapped, and he may not register in the advanced course without the consent of the instructor.

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College*	Curriculum	Yr.
<i>Accounting</i>								
AC1	Accounting I		4	4	0	BA	All	1
AC2	Accounting II		4	4	0	BA	All	1
AC5	Cost Accounting	AC2	4	4	2	BA	All	2
AC6	Cost Accounting	AC2	4	4	2	BA	All	2
AC7	Accounting Problems	AC4	3	4	0	BA	All	3
AC8	Accounting Problems	AC4	3	4	0	BA	All	3
AC9	C. P. A. Problems	AC4	3	5	0	BA	Elective	
AC10	Income Tax and Public Accounting	AC4	3	5	0	BA	Elective	
<i>Biology</i>								
B1	General Zoology		3	2	2	LA	Biology	1
B2	General Botany		3	2	2	LA	Biology	1
B3	Invertebrate Zoology	B1	2	2	4	LA	Biology	2, 3
B4	Invertebrate Zoology	B3	2	2	4	LA	Biology	2, 3
B5	Vertebrate Zoology	B1	2	2	4	LA	Biology	3
B6	Vertebrate Zoology	B5	2	2	4	LA	Biology	3
B7	Animal Physiology	B6	2	3	0	LA	Biology	
B8	Animal Physiology	B7	2	3	0	LA	Biology	
B9	Principles of Genetics	B1,2	2	3	0	LA	Biology	
B10	Principles of Genetics	B9	2	3	0	LA	Biology	
B11	Animal Histology	B6	2	2	2	LA	Biology	
B12	Animal Histology	B11	2	2	2	LA	Biology	
B13	Vertebrate Embryology	B6	2	2	2	LA	Biology	
B14	Vertebrate Embryology	B13	2	2	2	LA	Biology	
B15	General Parasitology	B3,4	2	2	2	LA	Biology	
B16	General Parasitology	B15	2	2	2	LA	Biology	
B17	Mammalian Anatomy	B6	2	1	6	LA	Biology	
B18	Mammalian Anatomy	B17	2	1	6	LA	Biology	
B19	Histological Technique	B12	2	1	6	LA	Biology	
B20	Histological Technique	B19	2	1	6	LA	Biology	

*NOTE: BA = College of Business Administration.

LA = College of Liberal Arts.

Eng = College of Engineering.

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
Biology — Continued								
B21	History of Biology		2	3	0	LA	Biology	
B22	History of Biology		2	3	0	LA	Biology	
B25	General Entomology	B1	3	3	4	LA	Biology	
B26	Economic Entomology	B1,B25	3	3	4	LA	Biology	
B61	Seminar		2	3	0	LA	Biology	
B62	Seminar	B61	2	3	0	LA	Biology	
B65	Thesis		3			LA	Biology	
B66	Thesis		3			LA	Biology	

Co-ordination

C1	Vocational Conference		1½	2	0	LA	All	5
C2	Vocational Conference		1½	2	0	LA	All	5
C7	Engineering Conference		1½	2	0	Eng	All	5
C8	Engineering Conference		1½	2	0	Eng	All	5
C11	Business Conference		1½	2	0	BA	All	5
C12	Business Conference		1½	2	0	BA	All	5

Chemistry

Ch1	General Chemistry		4	3	3	Eng,LA	{ All,Eng LA Pure & Applied Science	1 1 1
Ch2	General Chemistry	Ch1	4	3	3	Eng,LA	{ All,Eng LA Pure & Applied Science	1 1 1
Ch9	Qualitative Analysis	Ch1,2	3	4	0	Eng,LA	{ IV(E), LA Chem	2
Ch11	Qualitative Anal. Lab.	Ch1,2,9	2½	0	10	Eng,LA	{ IV(E), LA Chem	2
Ch12	Quantitative Analysis	Ch1,2,9,14	2	3	0	Eng,LA	{ IV(E), LA Chem	2
Ch13	Quantitative Analysis	Ch1,2,12,15 or 17	2	3	0	Eng,LA	{ IV(E), LA Chem	3
Ch14	Quantitative Anal. Lab.	Ch1,2,11,12	1½	0	7	Eng,LA	{ IV(E), LA Chem	2
Ch15	Quantitative Anal. Lab.	Ch14,13	2	0	9	LA	Chem	3
Ch17	Quantitative Anal. Lab.	Ch1,2,13,14	1	0	5	Eng	IV	3
Ch25	Organic Chemistry	Ch1,2,27	3	4	0	LA	Chem	
Ch26	Organic Chemistry	Ch1,2,25,28	3	4	0	LA	Chem	
Ch27	Organic Chemistry Lab.	Ch1,2,25	1	0	5	LA	Chem	
Ch28	Organic Chemistry Lab.	Ch1,2,26,27	1	0	5	LA	Chem	
Ch31	Organic Chemistry	Ch1,2,33,40	2	3	0	Eng,LA	{ IV(E), LA Chem	4
Ch32	Organic Chemistry	Ch31,34	2	3	0	Eng,LA	{ IV(E), LA Chem	4
Ch33	Organic Chemistry Lab.	Ch1,2,31,40	1	0	5	Eng,LA	{ IV(E), LA Chem	4
Ch34	Organic Chemistry Lab.	Ch32,33	1	0	5	Eng,LA	{ IV(E), LA Chem	4
Ch35	Organic Chemistry	Ch32,37 or 39	2	3	0	Eng,LA	{ IV(E), LA Chem	5
Ch37	Organic Chemistry Lab.	Ch34,35	2	0	9	LA	Chem	5
Ch39	Organic Chemistry Lab.	Ch34,35	1	0	5	Eng	IV	5
Ch40	Physical Chemistry	{ Ch12,14,13, 15 or 17	2½	3	2	Eng,LA	{ IV(E), LA Chem	3

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
Chemistry — Continued								
Ch41	Physical Chemistry	Ch13,15,40	3½	4	4	LA	Chem	4
Ch42	Physical Chemistry	Ch41	3½	4	4	LA	Chem	4
Ch45	Physical Chemistry	Ch13,17,40	3	4	2	Eng	IV	4
Ch46	Physical Chemistry	Ch45	3	4	2	Eng	IV	4
Ch48	Colloidal Chemistry	Ch41	2½	3	2	LA	Chem	
Ch51	Sources of Information	Ch1,2	1	1	0	Eng, LA	IV(E) LA Chem	2 2
Ch52	History of Chemistry	Ch1,2	2	3	0	LA	Elective	
Ch63	Advanced Chemistry	Ch42	2	3	0	LA	Chem	
Ch64	Advanced Chemistry	Ch35	3	3	4	LA	Chem	
Ch65	Thesis	Ch42	3	0	9	LA	Chem	
Ch66	Thesis	Ch42	4	0	12	LA	Chem	
Ch101	Adv. Physical Chemistry		3			LA	Graduate	
Ch102	Adv. Physical Chemistry		3			LA	Graduate	
Ch103	Adv. Organic Chemistry		3			LA	Graduate	
Ch104	Adv. Organic Chemistry		3			LA	Graduate	
Ch105	Graduate Thesis		2-4			LA	Graduate	
Ch106	Graduate Thesis		2-4			LA	Graduate	
Ch107	Graduate Thesis		2-4			LA	Graduate	
Ch108	Graduate Thesis		2-4			LA	Graduate	

Chemical Engineering

ChE1	Flow of Fluids	P1	2	3	0	Eng	IV	3
ChE2	Industrial Stoichiometry	Ch12,13	2	3	0	Eng	IV	3
ChE3	Unit Operations	ChE1,5	3	4	0	Eng	IV	4
ChE4	Unit Operations	ChE2,3,6	3	4	0	Eng	IV	4
ChE5	Unit Operations Lab.	ChE3	1½	0	4	Eng	IV	4
ChE6	Unit Operations Lab.	ChE4	1½	0	4	Eng	IV	4
ChE7	Inorganic Chem. Tech.	Ch9,ChE2	2	3	0	Eng	IV	5
ChE8	Organic Chem. Tech.	Ch32,ChE4	2	3	0	Eng	IV	5
ChE9	Chem. Process Lab.	ChE4	3	1	6	Eng	IV	5
ChE10	Chem. Eng. Projects	ChE4	4	1	6	Eng	IV	5
ChE11	Chem. Eng. Thermo-dynamics	Ch46	2	3	0	Eng	IV	5
ChE12	Engineering Materials		2	3	0	Eng	IV	5

Civil Engineering

C13	Surveying I	M3	1½	3	0	Eng	I	2
C14	Surveying II	C13	2½	4	0	Eng	I	2
C15	Surveying I, F & P	D1,C13	1	0	5	Eng	I	2
C16	Surveying II, F & P	C14,5	1	0	5	Eng	I	2
C17	Surveying III	C13,4	2	3	0	Eng	I	3
C18	Surveying IV	C17	2	3	0	Eng	I	3
C19	Surveying III, F & P	C15,6,7	1	0	5	Eng	I	3
C110	Surveying IV, F & P	C18,9	1	0	5	Eng	I	3
C111	Hydraulics	ME20,21	2½	4	0	Eng	I,II,III,V	3
C112	Hydraulics	C111	2	3	0	Eng	I,II,V	3
C115	Theory of Structures	ME22,23	3	4	0	Eng	I	4
C116	Theory of Structures	C115	3	4	0	Eng	I	4
C118	Concrete Testing Lab.	ME69	1½	1	3	Eng	I	4
C121	Sanitary Engineering	C111,12	2	3	0	Eng	I	4
C122	Sanitary Engineering	C121	2	3	0	Eng	I	4
C123	Engineering Structures	C115,16,ME23	3	4	0	Eng	I	5
C124	Engineering Structures	C123	3	4	0	Eng	I	5
C125	Concrete	ME23,C118	2	4	0	Eng	I	5

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Civil Engineering — Continued</i>								
CI26	Concrete	CI25	2	4	0	Eng	I	5
CI29	Design of Structures	CI23,25	3	2	9	Eng	I	5
CI30	Design of Structures	CI24,26,29	3	2	9	Eng	I	5
CI31	Highway Engineering	CI7,9	2	3	0	Eng	I	5
CI32	Highway Engineering	CI31	2	3	0	Eng	I	5

Drawing and Graphic Arts

D1	Engineering Drawing		3	6	0	Eng, LA	{ E, All LA, Applied Science	1
D2	Descriptive Geometry	D1	3	6	0	Eng, LA	{ E, All LA, Applied Science	1
D3	Machine Drawing	D1	2	6	0	Eng	III	2
D4	Machine Drawing	D1	2	6	0	Eng	II, V	2

English

E1	English I		3	3	0	Eng, LA	{ E, All LA, Applied Science	1
E2	English I	E1	3	3	0	Eng, LA	{ E, All LA, Applied Science	1
E1-A	English I		3	3	0	LA	All	1
E2-A	English I		3	3	0	LA	All	1
E1-B	Fundamentals Bus. English		3	3	0	BA	All	1
E2-B	Fundamentals Bus. English		3	3	0	BA	All	1
E3-B	Business Communication		2	3	0	BA	All	2
E4-B	Business Communication		2	3	0	BA	All	2
E5-B	Advanced Report Writing		2	3	0	BA	Elective	
E5	Advanced Composition	E2-A, 1-A	2	3	0	LA	English	3
E6	Advanced Composition	E5	2	3	0	LA	English	3
E7	Creative Writing	E6	2	3	0	LA	Elective	
E8	Creative Writing	E7	2	3	0	LA	Elective	
E9	Journalism I		3	4	0	LA, BA	Elective	
E10	Journalism I	E9	3	4	0	LA, BA	Elective	
E11	Journalism II	E10	3	4	0	LA, BA	Elective	
E12	Journalism II	E11	3	4	0	LA, BA	Elective	
E13	Effective Speaking		1	2	0	BA	Elective	
E14	Effective Speaking	E13	1	2	0	BA	Elective	
E15	Survey of English Lit.		3	4	0	LA	{ Eng. & S.S. Math & Phys. Biology	2 2
E16	Survey of English Lit.		3	4	0	LA	{ Eng. & S.S. Math & Phys. Biology	2 2
E17	English Drama before Shakespeare		2	3	0	LA	English	
E18	Chaucer		2	3	0	LA	English	
E19	Shakespeare		2	3	0	LA	English	3
E20	Shakespeare		2	3	0	LA	English	3
E21	19th Cent. Poetry I		2	3	0	LA	Elective	
E22	19th Cent. Poetry II		2	3	0	LA	Elective	
E23	17th & 18th Cent. Prose		2	3	0	LA	Elective	
E24	19th Cent. Prose		2	3	0	LA	Elective	
E25	American Lit. to 1860		2	3	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>English — Continued</i>								
E26	American Lit. after 1860		2	3	0	LA	Elective	
E27	History of English Novel		2	3	0	LA	Elective	
E28	History of English Novel		2	3	0	LA	Elective	
E29	Great European Writers		2	3	0	LA	Elective	
E30	Great European Writers		2	3	0	LA	Elective	
E31	Comparative Drama		2	3	0	LA	Elective	
E32	Comparative Drama		2	3	0	LA	Elective	
E33	Modern Lit. 1895-1915		2	3	0	LA	Elective	
E34	Modern Lit. Since 1915		2	3	0	LA	Elective	
E35	The Essay in England and America		2	3	0	LA	Elective	
E36	Introduction to Criticism		2	3	0	LA	Elective	
E61	Seminar		2	3	0	LA	Elective	
E62	Seminar		2	3	0	LA	Elective	

Economics

Ec1	Economic Geography		3	3	0	BA	All	1
Ec2	Com. & Ind. Hist. of U. S.		4	4	0	BA	All	1
Ec3	Economic Principles		2	3	0	{BA LA	All Engl&S.S.	2
Ec4	Economic Principles	Ec3	2	3	0	Same as Ec3		
Ec5	Economic Problems	Ec3	2	3	0	{BA LA	All Econ,Soc	3 3
Ec6	Economic Problems	Ec5	2	3	0	Same as Ec5		
Ec7	Money and Banking	Ec3,4	2	3	0	LA	Elective	
Ec8	Business Cycles	Ec5,6	2	3	0	LA,BA	Elective	
Ec9	Statistics in Business		2	2	2	BA	Elective	
Ec10	Statistics in Business		2	2	2	BA	Elective	
Ec11	Labor Problems	Ec3,4	3	4	0	LA,BA	Elective	
Ec12	Economic Systems	Ec3,4	2	3	0	LA,BA	Elective	
Ec14	Inter. Ec. Relations	Ec5,6	3	4	0	LA,BA	Elective	
Ec15	Hist. of Econ. Thought	Ec5,6	2	3	0	LA,BA	Elective	
Ec16	Adv. Econ. Theory	Ec15	2	3	0	LA,BA	Elective	
Ec17	Statistics		2	3	0	LA	Elective	
Ec18	Statistics	Ec17	2	3	0	LA	Elective	
Ec21	Economics		2	3	0	Eng,LA	{All(E) LA,Chem	3
Ec22	Economics	Ec21	2	3	0	Eng,LA	{All(E) LA,Chem	3
Ec61	Seminar		2	3	0	LA	Elective	
Ec62	Seminar	Ec61	2	3	0	LA	Elective	
Ec65	Thesis		3			LA	Elective	
Ec66	Thesis		3			LA	Elective	

Education

Ed1	History of Education		2	3	0	LA	Elective	
Ed2	History of Education		2	3	0	LA	Elective	
Ed3	Educ. Measurements		2	3	0	LA	Elective	
Ed4	Educ. Org. and Adm.		2	3	0	LA	Elective	
Ed7	Comparative Education		2	3	0	LA	Elective	
Ed9	Educ. Sociology		2	3	0	LA	Elective	
Ed10	Educ. Philosophy		2	3	0	LA	Elective	
Ed11	Principles of Secondary Education		2	3	0	LA	Elective	
Ed12	Methods of Teaching in Secondary Schools		3	4	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Electrical Engineering</i>								
EL1	Electrical Eng. I	P2	1	3	0	Eng	III	2
EL2	Electrical Eng. I	EL1	1	3	0	Eng	III	2
EL5	Electrical Machinery	P2	4	4	4	Eng	I,II,V	2
EL5A	Electrical Machinery	P2,M6	4	4	4	Eng	IV	5
EL6	Electrical Measurements	EL5	2½	3	3	Eng	II,V	3
EL9	Electrical Eng. II	P2	1½	3	0	Eng	III	3
EL10	Electrical Eng. II	M7	2	3	0	Eng	III	3
EL11	Electrical Eng. Lab.	EL2	1	0	3	Eng	III	3
EL12	Electrical Eng. Lab.	EL10	1	0	3	Eng	III	3
EL13	Elec. Measurements I	EL9	2½	4	0	Eng	III	3
EL14	Elec. Measurements II	EL10,13	2	3	0	Eng	III	3
EL17	Electrical Eng. III	EL10,M6	2	3	0	Eng	III	4
EL18	Electrical Eng. III	EL17	2	3	0	Eng	III	4
EL19	Electrical Testing Lab.	EL17	2	2	3	Eng	III	4
EL20	Electronics Lab. I		1½	1	3	Eng	III	4
EL21	Electronics	M7,P2	1	2	0	Eng	III	4
EL22	Electronics	EL21	2½	4	0	Eng	III	4
EL23	Elec. Measurements Lab.	EL13,14	2	0	3	Eng	III	4
EL24	Adv. Measurements Lab.	EL13,14	2	0	3	Eng	III	4
EL25	Electrical Eng. IV	EL18	2½	4	0	Eng	III	5
EL26	Electrical Eng. IV	EL25	2½	4	0	Eng	III	5
EL27	Adv. Elec. Eng. Lab.	EL25	2	2	3	Eng	III	5
EL28	Adv. Electronics Lab.	EL20,22,30, 32,36,37	2	1	3	Eng	III	5
EL29	Electrical Eng. V-A	EL21,22	2	3	0	Eng	III	5
EL30	Electrical Eng. V-A	EL29,32	2	3	0	Eng	III	5
EL31	Electrical Eng. V-B	M7	2	3	0	Eng	III	5
EL32	Electrical Eng. V-B	EL31	2	3	0	Eng	III	5
EL35	Ultra High Frequency Technique	EL29,31	2	4	0	Eng	III	5
EL36	Ultra High Frequency Technique	EL32,35	2	4	0	Eng	III	5
EL37	Electronics Lab. II	EL20,21,22, 29,31,35	1½	1	3	Eng	III	5
EL38	Ultra High Freq. Tech. Lab.	EL20,22,29, 30,32,36,37	1½	1	3	Eng	III	5
<i>French</i>								
F1	Elementary French		3	5	0	LA	Elective	
F2	Elementary French	F1	3	5	0	LA	Elective	
F3	Intermediate French	F2	3	3	0	LA	Elective	1
F3	Intermediate French	F1	3	4	0	LA	Elective	
F4	Intermediate French	F3	3	3	0	LA	Elective	1
F4	Intermediate French	F3	3	4	0	LA	Elective	
F5	Modern French Literature	F4	3	4	0	LA	Elective	
F6	Modern French Literature	F5	3	4	0	LA	Elective	
F7	French Classicism	F4	3	4	0	LA	Elective	
F8	French Classicism	F4	3	4	0	LA	Elective	
F9	French Romanticism	F4	3	4	0	LA	Elective	
F10	French Romanticism	F9,F4	3	4	0	LA	Elective	
<i>Banking and Finance</i>								
F13	Business Finance		2	3	0	BA	All	3
F14	Finance Problems		2	3	0	BA	All	3
F16	Banking and Business	Ec3	2	3	0	BA	Elective	
F18	Adv. Banking Problems		3	4	0	BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Banking and Finance — Continued</i>								
FI9	Investments		3	4	0	BA	Elective	
FI10	Investments		3	4	0	BA	Elective	
FI12	Public Finance		2	3	0	BA	Elective	
FI13	Real Estate Practice and Appraising		3	4	0	BA	Elective	
FI14	Insurance Principles and Practice		3	4	0	BA	Elective	
<i>German</i>								
G1	Elementary German		3	5	0	LA	Elective	
G1	Elementary German		3	3	0	LA	Elective	1
G2	Elementary German		3	5	0	LA	Elective	
G2	Elementary German	G1	3	3	0	LA	Elective	1
G3	Intermediate German	G2	3	4	0	LA	Elective	
G4	Intermediate German	G3	3	4	0	LA	Elective	
G5	Modern German Lit.	G4	3	4	0	LA	Elective	
G6	Modern German Lit.	G4	3	4	0	LA	Elective	
G7	Class. Per. of Ger. Lit.	G4	3	4	0	LA	Elective	
G8	Class. Per. of Ger. Lit.	G4	3	4	0	LA	Elective	
G9	Ger. Lit. of 19th Cent.	G4	3	4	0	LA	Elective	
G10	Ger. Lit. of 19th Cent.	G4	3	4	0	LA	Elective	
<i>Government</i>								
Gv1	Am. Govt. and Politics		3	3	0	{BA LA	All Elective S.S. Elective	1 1
Gv2	Am. Govt. and Politics		3	3	0	{BA LA	All Elective S.S. Elective	1 1
Gv3	Comparative Govt.		2	3	0	{BA LA	Elective	
Gv4	Comparative Govt.		2	3	0	{BA LA	Elective	
Gv5	Am. Const. Law		2	3	0	LA	Elective	
Gv5-B	Constitutional Law		3	4	0	BA	Elective	
Gv6	Am. Const. Law	Gv5	2	3	0	LA	Elective	
Gv7	Origins of Political Theory		2	3	0	{BA LA	Elective	
Gv8	Modern Political Theory		2	3	0	{BA LA	Elective	
<i>Geology</i>								
Gy1	General Geology		2	3	0	Eng	I	4
Gy2	General Geology	Gy1	2	3	0	Eng	I	4
Gy5	Historical Geology	Gy2	2	3	0	LA	Elective	
Gy6	Historical Geology	Gy5	2	3	0	LA	Elective	
<i>History</i>								
H1	History of Civilization		4	4	0	{BA LA	Elective Soc.Sci.Elect.	1 1
H2	History of Civilization		4	4	0	Same as H1		
H5	Europe 1789-1870		2	3	0	LA	Elective	
H6	Europe since 1870		2	3	0	LA	Elective	
H7	England to 1688		2	3	0	LA	English	3
H8	England since 1688		2	3	0	LA	English	3
H9	United States to 1865		2	3	0	LA,BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>History — Continued</i>								
H10	United States since 1865		2	3	0	LA,BA	Elective	
H11	Latin American History		2	3	0	LA	Elective	
H12	Latin American History		2	3	0	LA	Elective	
H13	English Const. History		3	4	0	LA	Elective	
H14	American Const. History		3	4	0	LA	Elective	
H15	Far East Int. Rel. 1840-1900		2	3	0	LA	Elective	
H16	Far East Int. Rel. since 1900		2	3	0	LA	Elective	

Industrial Administration

IA1	Industrial Management I		2	3	0	BA	All	2
IA2	Industrial Management II		2	3	0	BA	All	2
IA3	Personnel Administration		3	4	0	BA	Elective	
IA4	Personnel Problems		3	4	0	BA	Elective	
IA6	Motion and Time Study		3	4	0	BA	Elective	
IA14	Production Processes I		3	4	0	BA	Elective	

Industrial Engineering

IN3	Production Processes I		2½	4	0	Eng	II,III,V	2
IN4	Production Processes II		1½	2	0	Eng	II,III,V	2
IN5	Industrial Mgt. I		2	3	0	{Eng Eng	II,V I	4 5
IN6	Industrial Mgt. II	IN5	2	3	0	Same as IN5		
IN7	Industrial Accounting		2½	1	4	Eng	V	4
IN8	Industrial Accounting	IN7	4	1	4	Eng	V	4
IN9	Cost Accounting	IN8	2½	2	2	Eng	V-Elective	5
IN10	Cost Accounting	IN9	2½	2	2	Eng	V-Elective	5
IN11	Methods Engineering	IN6	2½	2	2	Eng	V-Elective	5
IN14	Ind. Finance		2½	3	0	Eng	V	5
IN15	Sales Engineering		2½	3	0	Eng	V	5
IV17	Personnel Administration		3	4	0	Eng	II,V	5
IN22	Contracts		2	3	0	Eng	II,V	5
IN23	Industrial Statistics		2	2	2	Eng	V	4
IN24	Industrial Statistics		2	2	2	Eng	V	4
IN27	Industrial Management		2	3	0	Eng	IV	5
IN28	Motion and Time Study		3	2	3	Eng	V	3
IN30	Tech. Exec. Cont.		3	4	0	Eng	V	5

Business Law

L1	Legal Bases of Business		2	3	0	BA	All	2
L2	Legal Bases of Business		2	3	0	BA	All	2

Mathematics

M1	College Algebra		3	3	0	{Eng LA	All App & Pure Sci	1 1
M1-A	Mathematics A		3	4	0	BA,LA	Elective	4,5
M2-A	Mathematics B		3	4	0	BA,LA	Elective	4,5
M3	Trigonometry		2	2	0	{Eng LA	All App & Pure Sci	1 1
M4	Analytic Geometry and Intro. to Calculus	M1,3	5	5	0	Same as M1		

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
Mathematics — Continued								
M5	Differential Calculus	M1,4	3	4	0	{ Eng LA	All Math&Phys, Chem	2 2
M6	Integral Calculus	M5	3	4	0	Same as M5		
M7	Differential Equations I	M6	2½	4	0	Eng	III,IV	3
M8	Differential Equations II	M6,7	3	4	0	LA	Math&Phys	
M9	Higher Algebra	M1,3,4	3	4	0	LA	Elective	
M10	Curve Analysis	M5	3	4	0	LA	Elective	
M11	Solid Anal. Geometry	M4	3	4	0	LA	Elective	
M12	Modern Geometry	M4	3	4	0	LA	Elective	
M13	Spherical Trigonometry	M3	3	4	0	LA	Elective	
M14	Hist. of Mathematics		2	3	0	LA	Elective	
M15	Advanced Calculus	M6	3	4	0	LA	Math&Phys	3
M16	Advanced Calculus	M15	3	4	0	LA	Math&Phys	3
M17	Series	M5,6	3	4	0	LA	Elective	
M18	Theory of Equations	M5,6	3	4	0	LA	Elective	
M31	Mathematics I		3	3	0	{ LA BA	S.S.Elective Elective	1 1
M32	Mathematics II		3	3	0	Same as M31		

Marketing and Advertising

MA1	Marketing Principles		3	4	0	BA	All	3
MA2	Marketing Problems		3	4	0	BA	All	3
MA3	Sales Management		3	4	0	BA	Elective	
MA4	Sales Management		3	4	0	BA	Elective	
MA5	Advertising Principles		3	4	0	BA	Elective	
MA6	Advertising Problems		3	4	0	BA	Elective	
MA7	Retail Store Mgt.		3	4	0	BA	Elective	
MA8	Retail Merchandising		3	4	0	BA	Elective	

Mechanical Engineering

ME1	Mechanism		3	6	0	Eng	II & V	3
ME15	Industrial Plants	ME23,32	2½	6	0	Eng	II—Elective	5
ME16	Industrial Plants	ME15	2½	6	0	Eng	V,II—Elective	5
ME20	Applied Mech. (Statics)	P1	3	4	0	Eng	All	2
ME21	Applied Mech. (Kinetics)	ME20	3	4	0	Eng	All	3
ME22	Strength of Materials	ME20,21,P4	3	4	0	Eng	All	3
ME23	Strength of Materials	ME22	2	3	0	Eng	I,II,V	4
ME24	Advanced Mechanics	ME23	2	3	0	Eng	I,II	4
ME25	Strength of Materials		1½	2	0	Eng	III	4
ME27	Metallography	IN3	2	3	0	Eng	II & V	3, 4
ME29	Heat Eng. (Power Pl't Eq.)		2	3	0	Eng	II	3
ME30	Heat Eng. (Thermo.)	P4	3	4	0	Eng	II,IV	3
ME31	Heat Engineering	ME30,29	2½	4	0	Eng	II	4
ME32	Heat Engineering	ME31	2½	4	0	Eng	II	4
ME33	Refrigeration	ME32	2	3	0	Eng	II—Elective	5
ME34	Steam Turbines	ME31	2	3	0	Eng	II—Elective	5
ME35	Heat Engineering	P4	2	3	0	Eng	I	3
ME36	Heat Engineering	ME35	2½	2	3	Eng	III & V	4
ME39	Engine Dynamics	ME21	2½	4	0	Eng	II—Elective	5
ME40	Aerodynamics	ME21,CI12	2	3	0	Eng	II—Elective	4
ME42	Heating and Air Cond.	ME21,CI12	2	3	0	Eng	II—Elective V	4 5
ME44	Power Plant Eng.	ME32	2½	4	0	Eng	II	5
ME51	Machine Design	ME24	3	6	0	Eng	II	5
ME52	Machine Design	ME51	3	6	0	Eng	II	5

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Mechanical Engineering — Continued</i>								
ME61	Mechanical Eng. Lab.	ME29,31	2	0	4	Eng	II & V	4
ME62	Mechanical Eng. Lab.	ME32,61	2	0	4	Eng	II & V	4
ME63	Mechanical Eng. Lab.	ME32,62	2½	1	3	Eng	II	5
ME69	Testing Materials Lab.	ME22	1½	1	3	Eng	I & V	4, 5
ME73	Aircraft Structures	ME23	2	3	0	Eng	II—Elective	5
ME74	Aircraft Structures		2	3	0	Eng	II—Elective	5
ME76	Aircraft Eng. Design	ME39	2½	6	0	Eng	II—Elective	5

Physics

P1	Physics I		3	3	0	{ Eng LA	All App & Pure Sci	1 1
P2	Physics I		3	3	0	Same as P1		
P3	Physics II	P1,2	2	3	0	{ Eng LA LA	All Math&Phys, Chem	2 2 3
P3-A	General Physics		4	4	4	LA	Biol.	2
P4	Physics II	P1,2	2	3	0	{ Eng LA LA	All Math&Phys, Chem	2 2 2
P4-A	General Physics		4	4	4	LA	Biol.	2
P5	Physics Laboratory	P1,2	1	0	2	{ Eng LA LA	I,II,IV,V Math&Phys, Chem	2 2 3
P6	Physics Laboratory	P1,2	1	0	2	{ Eng LA	I,II,IV,V Math&Phys, Chem	2 2
P7	Physics Laboratory	P1,2	2	0	4	Eng	III	2
P8	Physics Laboratory	P1,2	2	0	4	Eng	III	2
P9	Optics	P3,M6	3	3	2	LA	Elective	
P10	Optics	P9	3	3	2	LA	Elective	
P13	Acoustics	P3,M6	3	3	2	LA	Elective	
P14	Acoustics	P13	3	3	2	LA	Elective	
P15	Modern Physics	P4,M7	3	3	2	LA	Elective	
P16	Modern Physics	P15	3	3	2	LA	Elective	
P31	Introduction to Physics	M31	4	4	0	{ LA BA	Soc Sci Elective	1 1
P32	Introduction to Physics	M32	4	4	0	Same as P31		
P65	Thesis		3			LA	Elective	
P66	Thesis		3			LA	Elective	
P101	Theoretical Physics		3			LA	Graduate	
P102	Theoretical Physics		3			LA	Graduate	
P103	Quantum Mechanics		3			LA	Graduate	
P104	Quantum Mechanics		3			LA	Graduate	
P105	Applied Mathematics		3			LA	Graduate	
P106	Applied Mathematics		3			LA	Graduate	
P107	Graduate Thesis		2-4			LA	Graduate	
P108	Graduate Thesis		2-4			LA	Graduate	
P109	Graduate Thesis		2-4			LA	Graduate	
P110	Graduate Thesis		2-4			LA	Graduate	

Public Administration

PA2	Public Administration I		3	4	0	BA	Elective	
PA4	Political Concepts		3	4	0	BA	Elective	
PA5	Bus. and Govt.		2½	4	0	BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Public Administration — Continued</i>								
PA7	Public Administration II		3	4	0	BA	Elective	
PA8	Public Administration III		3	4	0	BA	Elective	
<i>Physical Education</i>								
PE1	Hygiene		1	1	0	All		1
PE3	Physical Training		0	2	0	All		1
PE4	Physical Training		0	2	0	All		1
PE5	Princ. of Phys. Ed.		2	3	0	LA	Elective	
PE6	Play and Recreation		2	3	0	LA	Elective	
PE7	Hist. of Phys. Ed.		2	3	0	LA	Elective	
PE8	Admin. of Phys. Ed.		2	3	0	LA	Elective	
PE9	Football		2	3	0	LA	Elective	
PE11	Track and Field Events		2	3	0	LA	Elective	
PE12	Basketball and Baseball		2	3	0	LA	Elective	
<i>Philosophy</i>								
Ph1	Intro. to Philosophy		2	3	0	LA	Elective	
Ph2	Problems of Philosophy		2	3	0	LA	Elective	
Ph3	History of Philosophy		2	3	0	LA	Elective	
Ph4	History of Philosophy		2	3	0	LA	Elective	
Ph5	Philosophy of Religion		2	3	0	LA	Elective	
Ph6	Logic		2	3	0	LA	Elective	
<i>Psychology</i>								
Ps1	Intro. to Diff. Psych.		2	3	0	LA	Engl,S.S.	2
Ps2	General Psychology		2	3	0	LA	Engl,S.S.	2
Ps1-B	Psychology		2	3	0	BA	Elective	
Ps2-B	Psychology		2	3	0	BA	Elective	
Ps3	Experimental Psychology	Ps2	3	2	4	LA	Psych	3
Ps4	Differential Psychology	Ps3	3	2	4	LA	Psych	3
Ps5	Educ. Psychology	Ps2	3	4	0	LA	Elective	
Ps7	Soc. Psych. of Everyday Life		2	3	0	LA	Psych	3
Ps8	Soc. Psych. Theory and Methods		2	3	0	LA	Psych	3
Ps9	Psych. of Personality	Ps2	3	4	0	LA	Elective	
Ps10	Abnormal Psychology	Ps9	3	4	0	LA	Elective	
Ps11	Applied Psychology	Ps9	2	3	0	LA	Elective	
Ps13	Psychological Testing	Ps4	2	3	0	LA	Elective	
Ps14	Adv. Experimental Lab.	Ps3	2	3	0	LA	Elective	
Ps61	Seminar		2	3	0	LA	Elective	
Ps62	Seminar	Ps61	2	3	0	LA	Elective	
<i>Sociology</i>								
S1	Intro. to Sociology		2	3	0	{ Eng BA LA	All All Engl,S.S.	4 3 2
S2	Principles of Sociology		2	3	0	Same as S1		
S3	Social Problems	S1,2	2	3	0	LA,BA	Elective	
S4	Social Pathology	S1,2	2	3	0	LA,BA	Elective	
S5	Criminology	S1,2	2	3	0	LA	Elective	
S6	Penology	S5	2	3	0	LA	Elective	
S7	Prin. of Social Ethics	S1,2	2	3	0	LA	Elective	
S8	Probs. in Social Ethics	S7	2	3	0	LA	Elective	
S9	The Family	S1,2	2	3	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Sociology — Continued</i>								
S10	The Family	S9	2	3	0	LA	Elective	
S11	Social Control	S3,4,Ph2	2	3	0	LA	Elective	
S12	Social Progress	S11	2	3	0	LA	Elective	
S13	Population Problems	S1,2	2	3	0	LA	Elective	
S14	Urban Sociology	S1,2	2	3	0	LA	Elective	
S15	History of Sociological Thought	S3,4,Ph2	2	3	0	LA	Elective	
S16	Sociology of Religion	S3,4	2	3	0	LA	Elective	
S61	Seminar		2	3	0	LA	Elective	
S62	Seminar	S61	2	3	0	LA	Elective	
S65	Thesis		3			LA	Elective	
S66	Thesis		3			LA	Elective	
<i>Spanish</i>								
Sp1	Elementary Spanish		3	3	0	LA	S.S.Elective	1
Sp1	Elementary Spanish		3	5	0	LA,BA	Elective	
Sp2	Elementary Spanish	Sp1	3	3	0	LA	S.S.Elective	1
Sp2	Elementary Spanish	Sp1	3	5	0	LA,BA	Elective	
Sp3	Intermediate Spanish	Sp2	3	4	0	LA,BA	Elective	
Sp4	Intermediate Spanish	Sp3	3	4	0	LA,BA	Elective	
Sp5	Span. Lit. of the Golden Age	Sp4	3	4	0	LA	Elective	
Sp6	Span. Lit. of the Golden Age	Sp4	3	4	0	LA	Elective	
Sp7	Mod. Spanish Literature	Sp4	3	4	0	LA	Elective	
Sp8	Mod. Spanish Literature	Sp4	3	4	0	LA	Elective	
Sp9	Mod. Span.-American Lit.	Sp4	3	4	0	LA	Elective	
Sp10	Mod. Span.-American Lit.	Sp4	3	4	0	LA	Elective	
<i>Unclassified</i>								
U4	Business Policy		2½	4	0	BA	Elective	
Ps2-A	Orientation Thesis (see page 122)		0	1	0	All		1

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OFFICE HOURS

DEPARTMENT OF ADMISSIONS

9 A.M. to 4 P.M. daily

Saturday 12.00 N'N

Wednesday Evenings by Appointment

Northeastern University

College of Engineering

Paste a Small
Photo or
Snapshot
in This Space

APPLICATION FOR ADMISSION

(A non-returnable fee of five dollars must accompany this application. Make checks, money orders, or drafts payable to Northeastern University)

Boston, Mass.....19

To Director of Admissions:

I (Please print
name in full)

hereby respectfully apply for admission to the

- | | | |
|-----------------------------------|--|-------------------------------------|
| <input type="checkbox"/> Civil | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Electrical |
| <input type="checkbox"/> Chemical | <input type="checkbox"/> Aeronautical (option) | <input type="checkbox"/> Industrial |

Engineering Curriculum of the College of Engineering for the school period beginning.....19....

NOTE: The applicant should fill out the following form (both sides) with care.

Residence.....Street
Town or City.....
State.....Tel.....
Date of Birth.....Age.....
Place of Birth.....
Race.....Religion.....Nationality.....
Graduate of.....High School, Year.....
Location of High School.....
Name of Principal.....
Other high schools you attended.....
Names of Principals.....
If not a graduate, state the years of attendance and why you left.....
.....
Father's, Mother's, or Guardian's Name.....
.....
Address.....
Father's work, business or profession.....
Names and addresses of two other persons, to whom we may direct inquiries concerning you.
.....
.....

Weight.....Height.....
 Have you any physical infirmities? Explain, if any.....

 Defects of speech.....
 Defects of hearing.....
 Defects of sight.....
 Bodily infirmities.....
 Is your general health good, fair, or poor?.....
 Have you done collegiate work elsewhere?.....
 If so, name and address of college or university.....

Name of person who will furnish transcript of your college record.....

Do you expect advance credit for past collegiate work?.....

Are you a citizen of the United States?

List all athletics and other extra curricula high school activities you have engaged in.....

Names and addresses of all past employers with brief description of each job, length of employment, and wages received.....

Declaration of Parent or Guardian

This application has been read by me and has my approval.

.....
 Signature of Parent or Guardian

Date.....

Milton J. Schlagenhauf, Director of Admissions
Northeastern University
360 Huntington Avenue
Boston, Mass.

Dear Sir:

Please send me additional information on the following points:

.....
.....
.....
.....
.....
.....
.....
.....

Name.....

Street and Number.....

Town or City.....

State.....

NORTHEASTERN UNIVERSITY

(CO-EDUCATIONAL)

COLLEGE OF LIBERAL ARTS

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical (with an Aeronautical option), Electrical, Chemical, and Industrial Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

COLLEGE OF BUSINESS ADMINISTRATION

Offers three curricula: Accounting, Marketing and Advertising, and Industrial Administration. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Economics, English, Government, History, Mathematics, Physics, Psychology, and Sociology. A special program preparing for admission to the School of Law is also available. Complete program equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Associate in Arts title conferred.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the co-operative plan. After the freshman year, students may alternate their periods of study with periods of work in the employ of business or industrial concerns at ten-week intervals. Under this plan they gain valuable experience and earn a large part of their college expenses.

In addition to the above schools the University has affiliated with it and conducts: the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the title of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

Law School

Other Schools

47 Mt. Vernon Street

360 Huntington Avenue

Boston, Massachusetts

Telephone: KENmore 5800



Northeastern University

COLLEGE OF BUSINESS ADMINISTRATION

1943-1944



(CO-EDUCATIONAL)

BOSTON, MASSACHUSETTS

January, 1943

GIFTS AND BEQUESTS

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program
- (b) For general endowment
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University".



RICHARDS HALL

NORTHEASTERN UNIVERSITY

College of Business Administration

Conducted on the Co-operative Plan

Catalogue

1943-1944

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Division A—Freshman Calendar, 1943-1944

1943

MAY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑬	17	18	19	20	21	22
⑳	24	25	26	27	28	29
③①	③①					

JUNE

S	M	T	W	T	F	S
		1	2	3	4	5
⑥	7	8	9	10	11	12
⑬	14	15	16	⑬	18	19
⑳	21	22	23	24	25	26
⑳	⑳	㉑	③①			

JULY

S	M	T	W	T	F	S
				①	②	③
④	⑤	6	7	8	9	10
⑪	12	13	14	15	16	17
⑬	19	20	21	22	23	24
⑳	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
①	2	3	4	5	6	7
⑧	9	10	11	12	13	14
⑬	16	17	18	19	20	21
⑳	23	24	25	26	27	28
⑳	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	⑥	7	8	9	10	11
⑬	⑬	⑬	⑬	⑬	⑬	⑬
⑬	20	21	22	23	24	25
⑬	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
③	4	5	6	7	8	9
⑩	11	⑬	13	14	15	16
⑬	18	19	20	21	22	23
⑬	25	26	27	28	29	30
③①						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
⑦	8	9	10	⑪	12	13
⑬	15	16	17	18	19	20
⑬	22	23	24	⑬	⑬	⑬
⑬	29	30				

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑬	13	14	15	16	17	18
⑬	20	21	22	⑬	⑬	⑬
⑬	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑬	⑬	⑬	⑬	⑬	⑬	⑬
⑬	⑬	⑬	⑬	⑬	⑬	⑬
⑬	⑬					

Days on which college exercises are held are shown thus: 1 2 3

Sundays, holidays, and vacations are shown thus: ① ② ③

Division B—Freshman Calendar, 1943-1944

1943

JULY

S	M	T	W	T	F	S
				①	②	③
④	⑤	⑥	⑦	⑧	⑨	⑩
⑪	12	13	14	15	16	17
⑮	19	20	21	22	23	24
⑳	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
①	2	3	4	5	6	7
⑧	9	10	11	12	13	14
⑮	16	17	18	19	20	21
⑳	23	24	25	26	27	28
㉑	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	⑥	⑦	⑧	⑨	⑩	⑪
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	25
⑳	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
③	4	5	6	7	8	9
⑩	11	⑮	13	14	15	16
⑮	18	19	20	21	22	23
㉑	25	26	27	28	29	30
㉒						

NOVEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
⑦	8	9	10	⑪	12	13
⑮	15	16	17	18	19	20
⑮	22	23	24	⑳	26	27
㉒	29	30				

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	⑳	㉑	㉒	㉓	㉔	㉕
㉖	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						①
②	3	4	5	6	7	8
⑨	10	11	12	13	14	15
⑮	17	18	19	20	21	22
㉓	24	25	26	27	28	29
㉕	31					

FEBRUARY

S	M	T	W	T	F	S
			1	2	3	4
⑥	7	8	9	10	11	12
⑮	14	15	16	17	18	19
㉑	21	㉒	23	24	25	26
㉓	28	29				

MARCH

S	M	T	W	T	F	S
			1	2	3	4
⑤	6	7	8	9	10	11
⑫	13	14	15	16	17	18
⑮	20	21	22	23	24	25
㉖	㉗	㉘	㉙	㉚	㉛	

Days on which college exercises are held are shown thus: 1 2 3

Sundays, holidays, and vacations are shown thus: ① ② ③

Upperclass Calendar, 1943-1944

1943

APRIL

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MAY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

JUNE

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

JULY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Days on which Division A students are in college are shown thus: **1 2 3**

Days on which Division B students are in college are shown thus: **1 2 3**

Sundays, holidays, and vacations are shown thus: **1 2 3**

Upperclass Calendar, 1943-1944

DECEMBER

S	M	T	W	T	F	S
			1	2	3	4
(5)	6	7	8	9	10	11
(12)	13	14	15	16	17	18
(19)	20	21	22	23	24	(25)
(26)	27	28	29	30	31	

1944

JANUARY

S	M	T	W	T	F	S
						(1)
(2)	3	4	5	6	7	8
(9)	10	11	12	13	14	15
(16)	17	18	19	20	21	22
(23)	24	25	26	27	28	29
(30)	31					

FEBRUARY

S	M	T	W	T	F	S
			1	2	3	4
(6)	7	8	9	10	11	12
(13)	14	15	16	17	18	19
(20)	21	(22)	23	24	25	26
(27)	28	29				

MARCH

S	M	T	W	T	F	S
				1	2	3
(5)	6	7	8	9	10	11
(12)	13	14	15	16	17	18
(19)	20	21	22	23	24	25
(26)	27	28	29	30	31	

APRIL

S	M	T	W	T	F	S
						1
(2)	3	4	5	6	7	8
(9)	10	11	12	13	14	15
(16)	17	18	(19)	20	21	22
(23)	24	25	26	27	28	29
(30)						

MAY

S	M	T	W	T	F	S
	1	2	3	4	5	6
(7)	8	9	10	11	12	13
(14)	15	16	17	18	19	20
(21)	22	23	24	25	26	27
(28)	29	(30)	31			

JUNE

S	M	T	W	T	F	S
				1	2	3
(4)	5	6	7	8	9	10
(11)	12	13	14	15	16	(17)
(18)	(19)	(20)	(21)	(22)	(23)	(24)
(25)	(26)	(27)	(28)	(29)	(30)	

Days on which Division A students are in college are shown thus: **1 2 3**Days on which Division B students are in college are shown thus: **1 2 3**

Sundays, holidays, and vacations are shown thus: (1) (2) (3)

Calendar for the College Year, 1943-1944

1943

- APRIL 12 *Monday*. Opening of college for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- APRIL 17 *Saturday*. Entrance condition examinations.
- APRIL 19 *Monday*. Patriots' Day. (College exercises omitted.)
- MAY 3 *Monday*. Registration and opening of college year for Division A freshmen. Students failing to register promptly on May 3rd will be charged a late registration fee of five dollars (\$5.00).
- MAY 31 *Monday*. Observation of Memorial Day. (College exercises omitted.)
- JUNE 21-26 Vacation for Division A upperclassmen.
- JUNE 23 *Wednesday*. Entrance condition examinations.
- JUNE 24 *Thursday*. Entrance condition examinations.
- JUNE 28 *Monday*. Co-operative work period begins for Division A upperclassmen.
- JUNE TO JULY 28 } Vacation for Division B upperclassmen and for
5 } Division A freshmen.
- JULY 6 *Tuesday*. Opening of college for Division B upperclassmen.
- JULY 12 *Monday*. Registration and opening of college year for Division B freshmen. Students failing to register promptly on July 12 will be charged a late registration fee of five dollars (\$5.00).
- SEPTEMBER 6 *Monday*. Labor Day. (College exercises omitted.)
- SEPTEMBER 6-11 Vacation for Division B freshmen.

- SEPTEMBER 13 *Monday*. Second semester begins for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- SEPTEMBER 13-18 Vacation for Division A freshmen.
- SEPTEMBER 20 *Monday*. Second semester begins for Division A freshmen.
- OCTOBER 12 *Tuesday*. Columbus Day. (College exercises omitted.)
- NOVEMBER 11 *Thursday*. Armistice Day. (College exercises omitted.)
- NOVEMBER 22 *Monday*. Second semester begins for Division B upperclassmen and Division B freshmen. Co-operative work period begins for Division A upperclassmen.
- NOVEMBER 24 *Wednesday*. College exercises omitted after 1:00 p.m.
- NOVEMBER 25 *Thursday*. Thanksgiving Day. (College exercises omitted.)
- DECEMBER 20-25 Vacation for Division B freshmen.
- DECEMBER 24 *Friday*. College exercises omitted after 1:00 p.m.
- DECEMBER 25 *Saturday*. Christmas. (College exercises omitted.)
- 1944
- JANUARY 1 *Saturday*. New Year's Day. (College exercises omitted.)
- JANUARY 30 *Sunday*. Baccalaureate and Commencement.
- JANUARY 31 *Monday*. Opening of new College year for Division A upperclassmen. Co-operative work period begins for Division B upperclassmen.
- FEBRUARY 22 *Tuesday*. Washington's birthday. (College exercises omitted.)
- APRIL 10 *Monday*. Opening of college year for Division B upperclassmen. Co-operative work period begins for Division A upperclassmen.

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"Is the Fault in Our Stars?"

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DR. CHARLES N. ARBUCKLE
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THE REVEREND HAROLD C. CASE
MINISTER, THE ELM PARK METHODIST CHURCH, SCRANTON, PA.

DR. HOWARD J. CHIDLEY
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RABBI BERYL D. COHON
RABBI, TEMPLE ISRAEL, BOSTON

THE REVEREND WALTON E. COLE
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THE REVEREND HAMILTON M. GIFFORD
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THE REVEREND WILLIAM H. GYSAN
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THE REVEREND J. LESTER HANKINS
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BISHOP OLIVER J. HART, III
BISHOP-COADIUTOR ELECT OF PENNSYLVANIA

DR. CHARLES W. HAVICE
DEAN OF CHAPEL, NORTHEASTERN UNIVERSITY, BOSTON

THE REVEREND JOHN HOON
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DR. FRANK JENNINGS
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DR. E. J. VAN ETEN
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NORTHEASTERN UNIVERSITY

General Statement

NORTHEASTERN UNIVERSITY is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) an Executive Committee which serves as an Ad Interim Committee between the regular meetings of the Board of Trustees and has general supervision of the financial and educational policies of the University; (b) a Committee on Housing which has general supervision over the buildings and equipment of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Development Committee which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University, from the outset, had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

With respect to program, Northeastern has limited itself:

- To offering, in its several schools, basic curricula from which non-essentials have been eliminated,
- To effective teaching,
- To advising and guiding students,
- To giving students the chance to build well-rounded personalities through a balanced program of extra-curricular activities.

The Northeastern Plan of Education is especially designed for the student who must earn while he learns. In the main, it consists of two definite types of education:

- Co-operative Education by Day,
- Adult Education by Night.

The plan has been developed in such a way that experience in jobs with pay is utilized to help boys of limited financial resources secure an education and at the same time gain the maximum

educational benefit from their practical experience. So far as the New England States are concerned, Northeastern University is the only institution whose day colleges, other than the School of Law, are conducted under the Co-operative Plan.

The several schools and programs of the University are operated either under the name "Northeastern University" or by its affiliated schools—the Lincoln Schools and The Huntington Day School for Boys. The following is a brief outline of the principal types of educational opportunities offered.

1. In the field of Co-operative Education there are three day colleges — the College of Liberal Arts, the College of Engineering, and the College of Business Administration. All of these colleges offer five-year curricula. The College of Liberal Arts offers majors in the usual fields of the arts and the sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. The College of Engineering, one of the largest engineering colleges in the United States, has curricula in Civil, Mechanical (with Aeronautical option), Electrical, Chemical, and Industrial Engineering. The College of Business Administration has curricula in Accounting, Marketing and Advertising, and Industrial Administration. The College of Engineering and the College of Business Administration confer the degree of Bachelor of Science with specification indicating the field of specialization. The Co-operative Plan under which all of these day colleges operate enables the student to alternate regular periods of classroom instruction with supervised employment in an industrial or commercial position, thus combining theory and practice in an exceedingly effective manner. Apart from the educational advantages of the Co-operative Plan is the opportunity for self-support while the student is pursuing his studies at Northeastern University. During the co-operative periods, students not only gain experience but are also paid for their services. Approximately three hundred business and industrial concerns co-operate with Northeastern University in making this program effective.
2. The School of Law conducts both a day and an evening undergraduate program, each program preparing for admission to the bar and for the practice of the law and leading to the degree of Bachelor of Laws.
3. The Adult Education Program has been developed in the evening work of the School of Law as indicated above, in the School of Business, and in the evening courses of the College of Liberal Arts. The School of Business has curricula in Management, Accounting, and Engineering and

Management. The School awards the Bachelor of Business Administration degree with specification. A division of the School of Business is also conducted in Springfield. The College of Liberal Arts offers certain of its courses constituting a program, three years in length, the equivalent in hours to one-half of the requirements for the A.B. or S.B. degree, providing a general education and preparation for admission to the School of Law. The title of Associate in Arts is conferred upon those who complete this program.

4. The Adult Education Program has also been developed through the Lincoln Schools, which are affiliated with and conducted by Northeastern University. The classes in these schools are held at convenient evening hours. The Lincoln Technical Institute offers curricula upon a college level in various phases of engineering leading to the title of Associate in Engineering; whereas the Lincoln Preparatory School, accredited by the New England College Entrance Certificate Board, prepares students for admission to college and offers other standard high school programs.
5. The Huntington Day School for Boys, also affiliated with and conducted by Northeastern University, is the outgrowth of a demand in the city of Boston for an urban preparatory school with high educational standards which would furnish thorough preparation for admission to the leading colleges and universities. While easily accessible to the various sections of Boston and to the suburbs, it has the facilities of a country day school and offers a country day school program. This School is one of the leading preparatory schools of the country.

Northeastern University and Affiliated Schools

Including War Courses

Statistical Summary

1941-1942

	<i>Administrative and Instructional Staff</i>	<i>Enrollment</i>
General Administration	9	
Northeastern University		
College of Liberal Arts		
Day	66	508
Evening	16	169
College of Engineering	90	1659
College of Business Administration	48	638
School of Business	113*	1634*
School of Law	35*	391*
Affiliated Schools		
Lincoln Technical Institute	46	962
Lincoln Preparatory School	22	583
Huntington Day School for Boys	15	155
Huntington Summer School	10	133
	<u>470</u>	<u>6832</u>
Less Duplicates	143	306
	327	6526
War Courses		
Civilian Pilot Training Program	4	81
Engineering Defense Program	109	1881
	<u>113</u>	<u>1962</u>
Less Duplicates	1	16
	<u>439</u>	<u>8472</u>
Less Duplicates between War Courses and Schools and Colleges	37	76
Different Number	<u>402</u>	<u>8396</u>

*These figures include the administrative officers, faculties, and students of the Divisions of the University in Worcester, Springfield, and Providence.

The Co-operative Plan

How It Works

THE co-operative plan works in the following manner. Upperclassmen are divided into two nearly equal groups, one of which is called Division A and the other Division B. Each man is assigned a job with some business or industrial concern. So far as possible each man in one Division is paired with a man in the other Division, so that the two, by taking turns, may occupy one job throughout the entire year. The Division A student starts the college year with ten weeks of classroom work, while the Division B student starts his year with a term at co-operative work. At the end of that term the Division A student goes out to work with a co-operating firm, while his place in the classroom is then taken by his *alternate*, the corresponding Division B student. When ten weeks more have passed, the Division A man returns to college, and the Division B man returns to the co-operative job. The alternation of work and classroom study continues throughout the year so that an upperclassman has annually two terms at college, two terms at co-operative work, and a brief vacation.

Faculty Co-ordinators

Students are assigned to a co-ordinator, who interviews them periodically during their freshman year for the purpose of determining their background, abilities, temperaments, and aptitudes. During these interviews the co-ordinator discusses various fields of activity and answers such questions as the students may have in regard to the many phases of business and industry. Each student is studied in the light of his physical condition, scholastic ability, and other factors affecting his probable success in vocational life. These interviews culminate in an agreement between the student and his co-ordinator regarding the field of co-operative work in which the student is to be placed. During his upperclass years the student continues to have frequent conferences with his co-ordinator regarding vocational adjustments and personal problems. In this way the progress of every student is observed and co-ordinated with his college work to the end that he may obtain maximum values from his training at Northeastern.

Placement

The co-ordinator visits co-operating firms and arranges with them for the employment of the students under his charge. The range of opportunities available to Northeastern students is wide,

including practically all phases of industrial life. As a general rule, sophomores are placed upon routine and laborious jobs through which they may prove their fitness for more responsible work. The jobs upon which Northeastern students are employed are in no sense protected opportunities. They are regular jobs under actual business conditions and are held in competition with other sources of supply. The only special privilege accorded Northeastern students is that of attending college on the co-operative plan. The University expects every student to stand on his own feet while he is on co-operative work, and advancement to the more responsible jobs is based entirely upon merit.

Supervision and Guidance

While the University does not adopt a paternal attitude toward co-operative work, it nevertheless assumes certain responsibilities toward students and co-operating firms. Co-ordinators visit each job in order that the employer may report upon the student's achievement and that necessary adjustments may be made. Co-ordinators supervise the assignment of students to various jobs and in conjunction with employers arrange for promotions and training schedules. Problems that arise on co-operative work are adjusted by common agreement of co-ordinator, student, and employer. In the event of special difficulties or dissatisfaction, the case may be adjusted by the Committee on Co-operative work, which comprises several members of the faculty.

Through a series of co-operative work reports prepared during their working periods, students are led to analyze their jobs and to develop a thoughtful and investigative attitude toward their working environment. A most important phase of co-operative work is the opportunity afforded for guidance by the frank discussion of actual problems encountered on the job. The intimate contact between co-ordinator and student is of great worth in helping the student to get the most value from each co-operative work assignment. While the University endeavors to provide every possible opportunity for its students, it expects them at the same time to take the initiative and to assume the responsibility involved in their individual development. To every student are available the counsel and guidance of the faculty, and every resource at its disposal. But the faculty does not coerce students who are uninterested or unwilling to think for themselves.

The co-operative plan is thus designed specifically to provide actual working conditions which afford the student practical experience, give meaning to his program of study, and train him in reliability, efficiency, and team work.

Correlation of Theory and Practice

Co-operating companies employ the students in the various departments of their establishments. The training is thorough. To derive the greatest value from his co-operative work the student is advised to continue in the employ of his co-operating firm for at least one year after graduation, since certain types of work which would afford him valuable experience cannot be made available to him while he is alternating between work and study. Statistics compiled over a period of many years show that on the average about fifty per cent of each graduating class remain with co-operating employers after graduation.

Co-operative Work Reports

The values to be derived from practical experience are further enhanced by required report writing. These co-operative work reports are written during the working periods by all co-operative students. A complete job analysis is required as the first report written on any new co-operative work assignment. Subjects of other reports are selected by the student after conference with his Co-ordinator of Co-operative Work, by whom they must be approved. The reports are designed to encourage observation and investigation on the part of the students and to help them to appreciate more fully the extent and value of their experience. These reports are carefully read by the Co-ordinator and are discussed with the student during the following college period. Exceptionally valuable results are obtained from these reports. The value derived must necessarily be directly proportional to the conscientious and intelligent concentration of effort by the student upon this phase of the work.

Co-operative Work Records

Complete and detailed records are kept of the co-operative work of each student. They are based upon reports made by the employer at the end of each working period; upon occasional personal interviews between the employer and the Co-ordinator; and upon various evidences of the student's attitude toward all the phases of his co-operative work. It is not possible for the student to secure a degree unless this part of the curriculum is completed satisfactorily. These records of practical experience serve as a valuable future reference for the Alumni Placement Division of the Department.

Positions Available

Because of uncertainties of business conditions, as well as other reasons beyond its control, the University cannot and does not guarantee to place students. Although the University in no way discriminates among students of various races and religions, considerable difficulty has been experienced in placing at co-operative work the members of certain racial groups and students who are physically handicapped. However, past experience has demonstrated that students who are willing and capable of adapting themselves to existing conditions are almost never without employment except in periods of severe industrial depression.

Earnings

It should be understood that the primary purpose of the Co-operative Plan is training. For this reason the rates of pay for students tend to be low because students are given the privilege of attending college on the Co-operative Plan and because effort is made to provide the student with the opportunity of being transferred, at reasonable intervals, from one department to another of the co-operating company.

The minimum rate of pay will be governed to a very large extent by prevailing wages and hours laws. To assist the student in budgeting his expenses, however, he should plan in normal times on a weekly rate of pay equal to the minimum prevailing rates for the metropolitan Boston area.

Location of Work

It is the policy of the University to assign students to co-operative work within commuting distance of their homes. This is not always possible, however, and at times it may be necessary for students to live away from home in order to obtain satisfactory and desirable co-operative work assignments.

Types of Co-operative Work

Insofar as possible students are placed at co-operative work in that general field for which they express preference, provided that aptitude, physical ability, temperament, and other personal qualities appear to fit them for this field. Usually students are placed first in those jobs of an organization where they may learn the fundamental requirements of the business.

For example, a student interested in manufacturing might be started as an operative on some machine in the plant. As his progress and other conditions warranted he would be transferred to other types of work such as shipping, inspecting, cost finding, adjusting complaints, or bookkeeping, and so on, so that in the course of his four years co-operative training he would have the opportunity to acquire a substantial background in at least some of the functions of factory administration. This progressive type of training is more readily obtained in the employ of one company. A change of company each year provides more a change of environment than a progression of experiences.

Engineering firms, manufacturing companies, public utilities, and many other types of enterprises are employing Northeastern students. In some cases definite training schedules have been established so as to permit the student one full year in each of several important departments.

Typical Co-operative Training Schedules

These schedules are arranged with the basic idea of giving the student a comprehensive training through the several different departments, but must of necessity be varied in accordance with the needs of those departments.

BOSTON EDISON COMPANY

The schedule of the Boston Edison Company is divided into the following general classifications. Very few co-operating students obtain experience in all branches, but students progress from year to year in the respective branches as conditions require.

Standardizing

- (a) Testing and standardizing of electrical instruments
- (b) Miscellaneous standardization
- (c) Repairs on electrical instruments
- (d) Laboratory high voltage tests

Steam Practice

- (a) Turbine, engine and boiler tests
- (b) Instrument tests and repairs
- (c) Miscellaneous tests

Electrical Testing

- (a) Testing and repairing of electrical instruments in power stations and sub-stations
- (b) Cable tests
- (c) High voltage tests on apparatus and in the field
- (d) Checking up construction work
- (e) Miscellaneous electrical tests

Chemical Engineering

- (a) Fuel analysis
- (b) Miscellaneous tests and analysis of oils, water paints, and other materials

*Photography**Office Work*

HUNT-SPILLER MANUFACTURING CORPORATION

- ONE YEAR General laboratory and plant work, including preparation of samples
Pyrometry
Use and care of metallurgical apparatus
- ONE YEAR Complete analysis of coal, coke, limestone, sand, iron, soil, etc.
- ONE YEAR Keeping of general metallurgical records, filing, and making of reports
- ONE YEAR Analysis for combined, graphitic, and total carbon with a complete knowledge of a carbon combustion apparatus

PEPPERELL MANUFACTURING COMPANY

- ONE YEAR Stock Records
- ONE YEAR Production Analysis
- ONE YEAR Inventory Control

General Information

College Expenses

Tuition

THE tuition for all curricula in the Day Colleges is \$250 per year, or \$125 per term. Certain fees and deposits are also required as specified in the following paragraphs. A complete statement of tuition and fee payments is given on page 31.

Students who carry academic loads of greater or less than normal amount may pay their tuition on a semester hour basis.

University Fee

All students are charged a University Fee of twenty-four dollars (\$24) a college year. This fee for upperclassmen is payable in two installments: twelve dollars (\$12) with the first payment of tuition and twelve dollars (\$12) with the second payment of tuition. For freshmen it is payable fourteen dollars (\$14) with the first tuition payment and ten dollars (\$10) with the second tuition payment.

The University Fee covers library, laboratory, materials charges, and similar items for which separate fees are frequently charged by other colleges and universities. It is payable by all students regardless of the curriculum in which they are enrolled.

Student Activities Fee

Each student in the Day Colleges is charged a student activities fee of sixteen dollars (\$16), for upperclassmen payable one-half with each tuition payment and for freshmen payable entirely with the first tuition payment. This fee supports in part certain student activities, and includes membership in the *Northeastern University Athletic Association* and subscription to *The Northeastern News*, the college paper.

The services of a physician are also available for all students under this fee. Minor ailments are treated by the college health officers without additional charge. If the student shows signs of more serious illness, he is immediately advised to consult a specialist or return to his home, where he can get further treatment.

No student shall be required to pay more than sixty dollars (\$60) in fees (University and Student Activities) during any one calendar year.

Chemical Laboratory Deposit

(Applies only to students taking chemical and chemical engineering laboratory work)

All upperclassmen taking chemical or chemical engineering laboratory work are required to make a deposit of ten dollars

(\$10) at the beginning of each term from which deductions are made for breakage, chemicals, and destruction of apparatus in the laboratory. Freshmen taking chemistry make a chemical laboratory deposit of ten dollars (\$10) at the beginning of the year.

Any unused portion of this deposit will be returned to the student at the end of the college year. If the charge for such breakage, chemicals, or destruction of apparatus is more than the sum deposited, the student will be charged the additional amount.

Schedule of Payments for Freshmen

<i>Division A</i>		<i>Amount</i>
<i>Date Due</i>		
May 3, 1943	Tuition	\$125.00
	Fees	30.00
	Chem. Lab. Deposit	10.00
		<hr/> \$165.00
September 20, 1943	Tuition	\$125.00
	Fees	10.00
		<hr/> \$135.00
<i>Division B</i>		
July 12, 1943	Tuition	\$125.00
	Fees	30.00
	Chem. Lab. Deposit	10.00
		<hr/> \$165.00
November 29, 1943	Tuition	\$125.00
	Fees	10.00
		<hr/> \$135.00

Schedule of Payments for Upperclassmen

<i>Division A</i>		
*April 12, 1943	Tuition	\$125.00
	Fees	20.00
		<hr/> \$145.00
*September 13, 1943	Tuition	\$125.00
	Fees	20.00
		<hr/> \$145.00
<i>Division B</i>		
*July 6, 1943	Tuition	\$125.00
	Fees	20.00
		<hr/> \$145.00
*November 22, 1943	Tuition	\$125.00
	Fees	20.00
		<hr/> \$145.00

Deferred Payment Fee

There will be a \$2.00 deferred payment fee added to all bills which are not paid by the Saturday following the date on which

*Students taking chemical laboratory work pay a deposit of \$10 additional.

payments fall due. When further extensions of time are given on payments which have been previously deferred, an additional \$2.00 fee will be charged for each extension.

Failure to make the required payments on time, or to arrange for such payments, is considered sufficient cause to bar the student from classes or suspend him from co-operative work until the matter has been adjusted with the Registrar.

Late Registration Fee

A fee of \$5.00 will be charged for failure to register in accordance with prescribed regulations on the dates specified in the college calendar.

Graduation Fee

A fee of ten dollars (\$10) covering graduation is required by the University of all candidates for a degree. This fee must be paid before the end of the seventh week of the second term in the senior year.

Payments

All payments should be made at the treasurer's office which is located on the first floor of Richards Hall. Checks should be made payable to Northeastern University.

Refunds

The University provides all instruction and accommodations on a yearly basis; therefore, *no refunds are granted except in cases where students are compelled to withdraw on account of personal illness or to enter the armed forces of the nation.*

Expenses

The following tables, compiled from expense returns submitted by the student body, give an idea of freshman expenditures under ordinary conditions.

Estimated College Expenses for a Freshman

Application Fee.....	\$ 5.00
Tuition.....	250.00
University Fee.....	24.00
Chemical Laboratory Deposit.....	10.00
Student Activities Fee.....	16.00
Books and Supplies.....	35.00
	<hr/>
	\$340.00

(Engineering students should add approximately \$25 for drawing instruments and equipment.)

*Estimated Living Expenses Per Week for a Freshman
Residing Away from Home*

Room Rent.....	\$ 4.00
Board.....	7.00
Laundry.....	1.00
Incidentals.....	2.00
	<hr/>
	\$14.00

The figures given above are approximate and may not exactly apply to any one student; however, they will be found to represent fairly well the expense of a freshman who lives comfortably but without extravagance.

Textbooks and Supplies

The Northeastern University Bookstore, located in the Basement of Richards Hall, is a department of the University and is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the University may be purchased at the Bookstore.

All students may purchase Day College textbooks which are for their own use at a ten per cent discount. The ten per cent discount will not apply on equipment, supplies, or novelties. It is the policy of the Bookstore, however, to stock these materials and to sell them at the lowest possible prices.

Part-Time Work

Students who find it necessary to accept part-time jobs while attending college may obtain such work through the Director of Co-operative Work.

No student is justified in assuming that the University will take care of his expenses or guarantee to supply him with work sufficient to meet all his needs.

A student should have available a reserve fund adequate to provide for immediate needs and unexpected contingencies. This should ordinarily amount to at least the first year's tuition plus the student activity and other fees, room rent, and board for several weeks, or a total of about \$500.

Grades and Examinations

Examinations

Examinations covering the work of the term are usually held at the close of each term. Exceptions may be made in certain courses where, in the opinion of the instructor, examinations are not necessary.

Condition Examinations

Condition examinations are given on the registration day of each ten-week period. The charge is three dollars (\$3.00) for each condition examination. No student may take more than two condition examinations on any one day.

Freshmen may take one condition examination to remove a deficiency in a first semester course on the upperclass registration day which comes at least ten weeks after the close of the first semester of the freshman year.

A student must petition to take a condition examination at least two weeks in advance of the date the examination is desired.

Senior Condition Examinations

No condition examinations are given at the end of the second term. This means that a failure in a second term senior course cannot be made up before Commencement.

No senior will be permitted to take more than one condition examination at the beginning of the second term.

The responsibility for the removal of a condition rests with the student, who is required to ascertain when and how the condition can be removed.

Grades

A student's grade is officially recorded by letters, as follows:

- A superior attainment
- B above average attainment
- C average attainment
- D lowest passing grade, poor attainment (the faculty will accept only a limited amount of grade D work toward the Bachelor's degree)
- F failure, removable by condition examination
- FF complete failure, course must be repeated in class
- I incomplete, used for intermediate grades only to signify that the student has not had time to make up work lost through excusable enforced absence from class
- L used in all cases of the removal of a failure by condition examination or by attendance at summer term.

A student who does not remove a condition before that course is again scheduled, a year later, must repeat the course. A condition in more than one subject may involve the loss of assignment to co-operative work.

The responsibility for the removal of a condition rests with the student who is required to ascertain when and how the condition can be removed.

Dean's List

A Dean's List, issued at the end of each term, contains the names of upperclass students who have an honor grade average in all subjects during the preceding period. Freshmen who achieve high scholastic standing are included on a Freshman Honor List, which is published at the end of each grading period. No student under disciplinary restrictions is eligible for either of the honor lists.

Reports on Scholastic Standing

Freshman reports are issued at the end of each grading period; upperclass reports, at the end of each term. Questions relative to grades are to be discussed with the student's faculty adviser.

Students are constantly encouraged to maintain an acceptable quality of college work. Parents and students are always welcomed by the college officers and faculty advisers for conference upon such matters.

Parents or guardians will be notified whenever students are advised or required to withdraw from the University.

General Conduct

Conduct

It is assumed that students come to the University for a serious purpose and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building or to any of the furniture, apparatus, or other property of the University, the damage will be charged to the student or students known to be immediately concerned; but if the persons who caused the damage are unknown, the cost for repairs may be assessed equally upon all the students of the University.

Students are expected to observe the accepted rules of decorum, to obey the regulations of the University, and to pay due respect to its officers. Conduct inconsistent with the general good order of the University or persistent neglect of work may be followed by dismissal; if the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is desired to administer the discipline of the University so as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present as his own any work which he has not performed, or to pass any examination by improper means, is regarded as a most serious offense and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

Scholastic Year for Seniors

Seniors of either division who are candidates for a degree in the current year must have completed all academic work, class assignments, theses, regular and special examinations, before twelve o'clock noon of the Saturday next following the close of recitations for seniors.

Attendance

Students are expected to attend all exercises in the subjects they are studying unless excused in advance. Exercises are held and students are expected to devote themselves to the work of the University between 9:00 A.M. and 5:00 P.M., except for a lunch period, on every week day.

No cuts are allowed. A careful record of each student's attendance upon class exercises is kept. Absence from regularly scheduled exercises in any subject will seriously affect the standing of the student. It may cause the removal of the subject or subjects from his schedule. If he presents a reasonable excuse for the absence, however, he may be allowed to make up the time lost and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course may designate.

Laboratory work can be made up only when it is possible to do so during hours of regularly scheduled instruction.

Absences from exercises immediately preceding or following a recess are especially serious and entail severe penalties.

Attendance at all mass meetings of the student body is compulsory. Exceptions to this rule are made only when the student has received permission from the Director of Student Activities previous to the meeting from which he desires to be absent.

Student Housing

Housing Regulations

The University endeavors to exercise due consideration and care for the student's welfare while he is in residence. This necessitates the adoption of the rules and regulations presented herewith.

1. Assignments will be made when the student registers.
2. Students may inspect rooms before accepting an assignment; after reaching a decision students must notify the office of the Registrar, 254R.

3. Students who accept room assignments must retain them for the period of their residence, unless given permission by the Registrar to change.

4. Students are not permitted to live in unsupervised quarters. Under no conditions are groups of students permitted to lease apartments.

5. Students are not permitted to engage rooms without the prior approval of the University. Those violating this rule will be required to give up such rooms immediately and will be assigned by the University to approved quarters.

6. Violation of any of the above rules is considered a breach of discipline and will be dealt with accordingly.

Dormitories

At present the University does not maintain dormitories. Provision, however, is made for students to secure rooms in the vicinity. Many freshmen prefer to take room and board at the fraternity houses, which are all supervised by the University through faculty advisers. For information relative to such housing write the Director of Admissions.

Rooms in the dormitory of the Huntington Avenue Branch of the Boston Y.M.C.A. may be secured only through the Housing Department of the Y.M.C.A. The applicant must present himself in person to a representative of the Department before assignment will be made.

Applicants desiring to room in the Association dormitory are advised to write the Housing Department of the Huntington Avenue Branch, 316 Huntington Avenue, Boston, Massachusetts.

Freshman Counseling

Freshman Orientation Period

In order that freshmen may be ready to pursue their academic work with greater composure and be somewhat acclimated before the beginning of scholastic work, three or four days prior to the first term are devoted to a freshman orientation period. During this time freshmen are advised as to choice of program, and assisted in every way possible in order that they may be prepared to begin serious study and work on the first day of the college term. All freshmen are required to attend all exercises at the University scheduled during the orientation period.

An optional feature of the orientation program is the freshman camp conducted under the auspices of the Student Union. The camp is planned particularly for out-of-town students, although commuters are welcomed. It aims at providing a stimulating and wholesome environment under vacation conditions in which the new men may become acquainted with one another and with members of the faculty. The camp site on Lake Massapoag, in the northern part of Massachusetts, is admirably equipped for this purpose, having ample facilities for baseball, basketball, tennis, boating and swimming. The cost of the two days at camp is nominal, and most freshmen avail themselves of this opportunity for recreation prior to the beginning of the college year.

Physical Examination

All freshmen receive a thorough physical examination at the University during the orientation period. All students are expected to report promptly at the appointed time for examination. Those who fail to appear at the appointed time will be charged a special examination fee of two dollars (\$2.00).

Freshman Counselors

At the time of his matriculation each freshman is assigned to a personal counselor, a member of the faculty, who serves as an interested and friendly counselor during the perplexing period of transition from school to college. A personal record card is prepared for each student, containing certain pertinent data from his preparatory school record, the report of his physical examination at Northeastern, his scores on psychological tests, the results of placement examinations, and any special notes which may be of significance in counseling work. The aim of the freshman counseling system is primarily to assist students in making an

effective start upon their programs and secondarily to acquire for the later use of guidance officers a fund of significant information relative to every freshman. Counseling is under the direction of the Dean of Students, assisted by a clinical psychologist, who handles the diagnosis and remedial treatment of difficult problem cases.

Individual Attention to Freshmen

Not only is attention given to the scholastic problems of the student, but also to personal problems in which advice is needed and desired. The aim is to guide the student to the fullest possible personal development.

The college record of each student is carefully analyzed in the light of what could reasonably be expected of him, in view of his previous school record, his score on psychological tests, and all other factors in his situation. If he is not doing his best work, an investigation is made to determine and eliminate the causes. If he is doing as well as could be expected or better, he is encouraged to continue his efforts. In other words, each student is held to the most effective work possible, through advice, encouragement, and assistance.

Scholarships, Prizes and Awards

Trustee Scholarships

Established in 1928 by the Board of Trustees of Northeastern University. Each year the University grants in the three Day Colleges twenty-five full tuition scholarships to entering freshmen who have demonstrated throughout their preparatory or high school course superior scholastic attainment. For additional information relative to these scholarships communicate with the Director of Admissions. Applications for Trustees' Scholarships must be filed on or before April 1, 1943.

Charles Hayden Memorial Scholarships at Northeastern University

Established in 1939 through the generosity of the Charles Hayden Foundation and subject to annual renewal. The Foundation, created by the will of the late Charles Hayden, an alumnus of the Boston English High School, offers annually a sum of money to be distributed as memorial scholarships at Northeastern University. The scholarships are awarded to worthy entering students whose parents are unable to finance the entire cost of their education. To be eligible for consideration a student must have graduated from the English High School or from one of the following high schools in Boston and its metropolitan area: Arlington, Belmont, Boston (Brighton, Charlestown, Commerce, Dorchester, East Boston, English, Hyde Park, Jamaica Plain, Mechanic Arts, Public Latin, Roslindale, Roxbury Memorial, South Boston), Braintree, Brookline, Cambridge (High and Latin, Rindge Technical), Canton, Chelsea, Dedham, Everett, Lexington, Malden, Medford, Melrose, Milton, Needham, Newton, North Quincy, Quincy, Revere, Somerville, Stoneham, Wakefield, Waltham, Watertown, Wellesley, Weston, Weymouth, Winchester, Winthrop. While the scholarships are designed primarily to assist students through their freshman year in college, the Foundation has set up a supplementary loan fund to make available limited assistance to meet exigencies which may arise in the upper class years. Each recipient of a Charles Hayden Memorial Scholarship is presented a properly endorsed certificate and is eligible for membership in the Charles Hayden Scholars Club of the University. Full particulars concerning these awards may be obtained from the Director of Admissions of Northeastern University.

Dean's List Scholarships

Established in 1929. Annually at the Dean's List Dinner three scholarships of one hundred dollars each, known as the Dean's

List Scholarships, are presented to the students with the outstanding records in the sophomore, middler, and junior classes. These scholarships are applicable to the recipients' tuition the first term of the following year.

Dean's List Senior Letter

Established in 1929. At the time of the award of the Dean's List Scholarships a Dean's List Senior letter is presented to the senior student who leads the seniors in the day colleges in scholastic achievement. The letter is a congratulatory one from the President of the University and is a coveted prize.

Sears B. Condit Honor Awards

Established in 1940 through the generosity of Sears B. Condit. In the fall of the year at a University convocation Sears B. Condit Honor Awards, not less than ten in number, are awarded to outstanding students in the upper three classes of the College of Liberal Arts, the College of Business Administration, and the College of Engineering. Students who have received the Dean's List Scholarships are not eligible for one of these Honor Awards. Each award carries a stipend of not less than fifty dollars as well as a certificate of achievement.

Boston Society of Civil Engineers Scholarship in Memory of Desmond FitzGerald

Established in 1931 by the Boston Society of Civil Engineers in memory of Desmond FitzGerald, a former president of the Society and an eminent hydraulic engineer with a distinguished record of service. The scholarship is subject to annual renewal. It has been awarded annually since 1931 to an outstanding Northeastern University senior or junior student in the Department of Civil Engineering of the College of Engineering. The presentation is made by the President of the Boston Society of Civil Engineers at a College of Engineering convocation in the spring of the year.

Tau Beta Pi Award

Massachusetts Epsilon Chapter of Tau Beta Pi Association, national honorary society in engineering, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

The Sigma Society Award

Established in 1930. The Sigma Society, the honor society of the College of Business Administration, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

The Academy Award

Established in 1938. The Academy, the honor society of the College of Liberal Arts, offers annually a scholarship of one hundred dollars to the freshman in the college who has, during the previous year, made the highest scholastic record.

Henry B. Alvord Memorial Scholarship in Civil Engineering

Established in 1940 in memory of the late Henry B. Alvord, Professor of Civil Engineering and Chairman of the Department for eighteen years. The award is made annually to a student graduating from an accredited secondary school who has demonstrated superior academic ability and gives promise of succeeding in civil engineering. The grant of two hundred and fifty dollars is made only to an entering freshman who is qualified for and plans to study civil engineering.

William J. Alcott Memorial Award

Established in 1934 by members of the faculty and other friends to perpetuate the memory of William Jefferson Alcott, Jr., a brilliant member of the Department of Mathematics in Northeastern University from 1924 until his death in 1933. The Award is offered annually in the form of a prize purchased with the income to the fund for outstanding scholastic achievement during the preceding year, either in a particular field of interest or for a superior academic record.

Public Speaking Contest

Established in 1922. Each spring the University conducts a Public Speaking Contest for which all students in the day colleges are eligible. Prizes of forty, thirty, twenty, and ten dollars respectively are awarded to the four winning speakers in a contest before the upperclass student body assembled in a general mass meeting. Speeches are original in nature and about ten minutes in length. The judges base their decision on appropriateness of subject, content, and delivery. Preliminary contests are held during the winter in each division.

Buildings and Facilities

Boston — A Great Educational Center

THE fact that Northeastern University is in Boston broadens the educational and cultural opportunities of its students.

Few other cities in the country are so rich in the finest elements of American life. Many of its historic buildings, such as the Old State House, Faneuil Hall, and the Old North Church, have become museums for the preservation of old documents, paintings, and other collections representative of early Colonial life. The Boston Public Library and the Museum of Fine Arts, both within a few blocks of the University Buildings, are widely noted for their treasures of literature and art. Even nearer to the University is Symphony Hall, home of the world-famous Boston Symphony Orchestra. And the many churches within Greater Boston not only afford the opportunity of hearing distinguished preachers but through their student clubs and young people's societies make possible for students a fine type of social and intellectual life.

University Buildings

Location

Northeastern University, except for the Law School, is housed in four buildings located on Huntington Avenue, Boston, at the end of the Huntington Avenue Subway and opposite the historic Boston Opera House. The main administrative offices of the University are located in Richards Hall, a four-story brick structure added to the physical plant of Northeastern in 1938.

The chief railroad centers of Boston are the North and South Stations. To reach the University from the North Station, board a car going to Park Street, at which junction transfer to any Huntington Avenue car. To reach the University from the South Station, board a Cambridge subway train for Park Street Under. There go up one flight of stairs and board any Huntington Avenue car.

East Building

The East Building serves as headquarters for the Colleges of Liberal Arts and Business Administration. In addition, it houses the University Library, the Business Administration Laboratory, and several department offices. Jacob P. Bates Hall is also in this building. The latter is used for University band and orchestra rehearsals, glee club rehearsals, and entertainments, as well as dramatic club work.

South Building

The South Building, located directly behind the East Building, houses the following laboratories: Time and Motion Study, Hydraulics and Sanitary Engineering, Concrete and Highway, and Electrical Measurements and Dynamo Laboratories. In addition, it provides space for department offices, classrooms, conference rooms and one large drafting room.

Richards Hall

Richards Hall is the first unit of the new Northeastern plant. Its 100,000 square feet of floor area provide ample space for administrative offices, the bookstore, Student Union reading and game rooms, Chapel, and many other facilities.

The major portion of the building is given over to laboratories and classroom areas. Laboratory space is provided for the following: Mechanical Engineering, General and Advanced Physics, Inorganic, Organic, Analytical, and Physical Chemistry, together with several special research laboratories.

Outstanding among the classroom areas are a large chemistry lecture hall and two large classrooms seating 300 and 200 students respectively. On the fourth floor are located three large, light and well-equipped drawing rooms, together with an art room for carrying on designing and drafting which form so important a part of technical work. The penthouse contains a radio laboratory, astronomy laboratory, and a blueprint room.

New Building

The New Building is the second unit of the proposed Northeastern plant. It has a basement and four stories housing laboratories, classrooms and a recreation area, the *University Commons*. Chemical engineering laboratories and classrooms take up the entire basement. The second floor contains a large lecture hall and classrooms. The Advertising Laboratory and classroom take up the entire third floor. The fourth floor is given over almost entirely to the biological laboratories and biology lecture room.

Beacon Hill Building

The building housing the Law School at 47 Mt. Vernon Street is a three-story structure completely equipped with administrative offices, faculty offices, classrooms, library and student recreational rooms. The interior of this building is both commodious and new, the entire structure having been recently remodeled by the University.

Laboratories

The laboratories of the University fall into three categories. The first group includes those for experimental work in the pure sciences of biology, chemistry, and physics. The second includes those for the study of engineering in its major branches (civil, mechanical, electrical, chemical, and industrial). The third comprises the business and statistical laboratory.

In addition to these laboratory facilities which are described in the following pages, motion pictures and lantern slides are frequently used to supplement classroom instruction. For this purpose, there are available motion picture projectors for both sound and silent film as well as several lantern slide projectors.

Biology

The Department of Biology occupies the fourth floor of the New Building, which contains in addition to the Zoological, Anatomical and Botanical Laboratories, its offices, research areas, and lecture hall. The laboratories are fully equipped for general and special work, with extensive collections of museum preparations, models, and specimen collections displaying thousands of specimens illustrating the various fields of biological study.

Chemistry

The Chemical Laboratories located on the fourth floor of Richards Hall were given to the University by the Charles Hayden Foundation. They are splendidly equipped for work in general and inorganic chemistry, qualitative and quantitative analysis, and organic and physical chemistry. In addition several service rooms and space for a limited amount of research are provided.

General Chemistry and Qualitative Analysis

This laboratory is fully equipped with water, gas, electricity, steam, and fume hoods. A hydrogen-sulphide room, a balance room, and a conference room are also a part of this unit.

Organic Chemistry

This laboratory provides about six feet of working space for each student. The facilities are similar to those in the general chemistry laboratory, and in addition, there is provided a large evaporating unit and an organic combustion furnace.

Quantitative Analysis and Physical Chemistry

The tables and fume hoods and other equipment in this room are similar to those in the Organic Laboratory. In addition, a

large drying oven, special balances, electrical instruments, temperature measuring devices, and other specialized apparatus are provided.

A small laboratory for technical analysis of such materials as coal, vegetable oils, petroleum, textiles, and rubber adjoins the main laboratory, and a special laboratory is also available for electrolytic work.

Research

Three small laboratories are equipped for advanced research. These are available for graduate thesis investigations.

Physics

The Physics Laboratories located on the second floor of Richards Hall are fully equipped for elementary and advanced study as well as research. In addition an astronomy laboratory and a radio laboratory are located in the penthouse on Richards Hall.

General

This laboratory, designed for elementary instruction, is provided with gas, water, and electricity. A spectrometer room, a photographic room, and a photometer room are directly connected with this laboratory. Sufficient apparatus is available so that ordinarily students may work alone on most experiments.

A second smaller laboratory is equipped for more specialized experiments, and has facilities for glass blowing and high vacuum work. A flexible electrical system here permits use of all the supplies available to the Advanced Laboratory.

Advanced

This laboratory is designed with a view to both precision and flexibility. A special switchboard provides single phase and polyphase alternating current and a variety of direct current potentials. A workshop with lathe, drill press, grinder, and other tools as well as two separate research rooms complement the laboratory. A large number of special instruments plus considerable auxiliary apparatus gives a well rounded supply of equipment for advanced study and research.

Astronomy and Radio

The astronomy laboratory is provided with equipment for grinding mirrors and constructing telescopes, and a platform on the roof provides a very good unobstructed view for making observations.

The radio laboratory is a completely shielded room and houses the amateur transmitting station which operates on both radio-telephone and radiotelegraph. Facilities are also available for research.

Psychology

The Psychology Laboratory, located on the third floor of Richards Hall, is equipped for the observation of reacting human beings under controlled conditions. Equipment consists of instruments for measuring and controlling factors involved in perception, memory, and learning, and of psychometric devices for the testing and evaluation of individual abilities.

Civil Engineering

Most of the laboratory work in civil engineering is, of course, actual field work in surveying. A considerable amount of demonstration equipment and models are available for use in the study of structures, hydraulics, sanitary engineering, highways, concrete and soil mechanics.

Field Work

The Department of Civil Engineering is provided with a variety of excellent and up to date equipment for field work. The instruments have been chosen to make possible the working out of advanced as well as elementary field problems, and to acquaint the students with the principal makes and types of instruments in general use.

Hydraulics and Sanitary Engineering

This laboratory located on the first floor of the South Building is equipped with demonstration measuring devices for use in connection with the courses in hydraulics.

Complete equipment is also provided for water and sewage analysis, and research students can be accommodated in this field.

Concrete and Highway Engineering

Located on the second floor of the South Building, this laboratory is equipped for conducting all the routine tests on cement and aggregate. The 300,000 lb. Riehle testing machine in the Mechanical Engineering Department is available for compression tests on concrete cylinders.

Equipment is also available for conducting a major portion of the accepted tests on bituminous materials as used in highway work. Soil Mechanics equipment consists of a general soil sampler, consolidometer, wet-mechanical gram-size analysis and a quicksand demonstration tank.

Mechanical Engineering

The Mechanical Engineering Department has a suite of well equipped laboratories containing a large variety of modern

machines and occupying over 10,000 square feet of floor space in the basement of Richards Hall. Special areas have been set aside and equipped for oil testing, concrete mixing, mechanics research, and similar purposes. Auxiliary equipment is, of course, available for making all the usual tests and measurements.

Steam Power

This equipment includes a wide variety of steam engines, turbines, pumps, heat exchangers, and measuring instruments.

The auxiliary steam power plant operated by the University and the Boston Y.M.C.A. is also used for testing purposes. This plant consists of four horizontal return tubular boilers, two burning coal and two burning fuel oil. These feed three reciprocating steam engines and one turbine which in turn drive four direct current generators.

Internal Combustion and Aeronautics

The internal combustion equipment includes a number of gas and oil, automobile, airplane, and Diesel engines. Most of these are set up for running experimental tests, but several are available for dismantling and demonstration purposes.

In addition to the study of airplane engines, the laboratory is equipped with a small wind tunnel for experimental work in aerodynamics.

Refrigeration, Heating, and Air Conditioning

Included under this heading are an ammonia refrigerating machine, a constant temperature room equipped for either heating or cooling, and a large air conditioner unit.

Testing Materials and Heat Treatment

For tension, compression, bending, and shearing tests, the laboratory is equipped with a 300,000 lb. capacity Riehle and a 50,000 lb. capacity Olsen, as well as several smaller testing machines. For other tests the laboratory has cement testers, torsional testing machines, impact testers, fatigue testers, hardness testers, extensometers, oil testing equipment calorimeters, as well as instruments for measuring speed, vibration, temperatures, pressures and flow of fluids.

For heat treatment studies an electric furnace and a gas fired furnace are available. Equipment magnifying up to 2600 diameters is available for photographing crystalline structures, and the laboratory has polaroid equipment for photoelastic stress analysis.

Machine Shop

Adjoining the laboratory is a machine shop fully equipped with machine tools, welding equipment, and a small forge.

Electrical Engineering

The basement of the South Building is occupied by the electrical laboratories. These cover an area of approximately 7,800 square feet and include the dynamo, measurements, high tension, electronics and communication laboratories.

Dynamo

This laboratory is provided with both 60 cycle 3 phase 230 volt alternating current and 115-230 volt three-wire direct current. The equipment includes more than sixty motors and generators of different types together with the necessary auxiliary equipment to operate and test them. The motors and generators have been selected so as to reduce as much as possible the risk from high voltage while making available to the students a representative range of commercial apparatus.

Electrical Measurements

The equipment here is of two distinct types: first, that planned primarily for teaching principles of measurement, and secondly, that which is used in teaching advanced standardizing methods as well as for calibrating instruments in other laboratories of the University. Briefly, this laboratory is equipped for practically any work in electrical measurements except for the absolute determinations carried on in national standardizing laboratories.

High Tension

This laboratory is equipped with the necessary transformers and auxiliary equipment to provide 4 Kva. at 50,000 volts potential. A special room has been equipped for cable and insulation testing, and impulse testing of insulation is made possible by a surge generator capable of producing waves having crest values up to 300,000 volts. A 4,000 ampere low voltage transformer is also available for the study of the effects of heavy currents in conductors, switches, and contacts.

Electronics and Communications

This laboratory is equipped with apparatus for about forty odd experiments in the field of Electronics, Networks, Radio Engineering and Ultra High Frequency Technique. The laboratory facilities are designed to cover all the experiments outlined in the second M. I. T. Conference on Ultra-High-Frequency Technique.

Chemical Engineering

The Department is now located in the ground floor of the New Building. A total of 8,218 square feet has been allotted for its exclusive use.

Unit Operations Laboratory

This laboratory is primarily devoted to the study of flow of fluids, filtration, heat transfer, distillation, evaporation, absorption, and drying; but houses in addition equipment for carrying out such unit processes as nitration, reduction, fusion, and sulphonation.

Approximately 1,000 square feet of this laboratory consists of a double floor area serviced by a traveling crane for installing and repairing semi-plant scale equipment.

Crushing, Grinding and Separation Laboratory

A separate laboratory equipped with a ventilating fan houses equipment for crushing, pulverizing, and separating solids. All equipment is operated by individual electric motors with speed control frequently taken advantage of to get experimental data.

Machine Shop

A small, well equipped shop is available for the construction and repair of equipment.

Research Space

In addition to the Research Laboratory, the mezzanine floor of the Unit Operations Laboratory is available for investigating new processes.

Industrial Chemical Laboratory

This laboratory is equipped with modern laboratory benches and is located next to the stock room. The determination of the optimum conditions for carrying out unit processes on a small scale is accomplished in this laboratory.

Industrial Engineering

Students in the Department of Industrial Engineering share in the use of the Mechanical Engineering Laboratories and the Business Laboratory. The Industrial Engineering Laboratory itself is located on the first floor of the South Building and is devoted exclusively to methods engineering (motion and time study work).

Methods Engineering

This laboratory is completely equipped with the latest facilities and tools used by methods engineers. Besides the general equipment consisting of benches, tables, lathe, jigs, fixtures, and racks, the laboratory has an ample supply of time study boards, stop watches and timers for time study work. There is also available complete motion picture equipment and microchronometers for micromotion work.

Design and Drafting Rooms

The University possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with lockers containing the drawing supplies, files containing blue prints, and photographs of machines and structures that represent the best practice. Drafting room blackboards are equipped with traveling straight edge devices which facilitate speed and accuracy in blackboard demonstrations.

Libraries

The new library is located on the first floor of the East Building. The reading room seats about 300 students at one time, and the stack capacity approximates 25,000 volumes. Here are available all of the general reference books, most of the professional and scientific volumes, and most of the periodicals to which the University subscribes.

Library hours are as follows:

8:45 A.M. to 10:00 P.M. Mondays through Fridays
8:45 A.M. to 5:00 P.M. Saturdays
Closed on Sundays and Holidays

The library is under the direction of a librarian and three assistants all of whom have had special training for the work.

A general reading room and library is maintained by the Northeastern Student Union in Room 356, Richards Hall. The books located here are chiefly non-technical works dealing with contemporary affairs, religious problems, international relations, travel, etc., among which students may browse during periods of relaxation. A few of the literary and religious periodicals are also available in this room.

Boston Public Library

All members of the University, whether resident or non-resident students, have the privilege of taking books from the Boston Public Library and of using the library for general reference and study. Inasmuch as this is one of the best in the country, it presents unusual opportunities to the students. Within a few minutes' walk from the University, it enables students to have unlimited reference at any time to books and periodicals bearing upon their studies.

Lecture Assembly Halls

Through special arrangement, Jordan Hall, Symphony Hall, and the Boston Opera House are made available for assembly purposes. These halls provide ample space for student activity assemblies and for special lectures by noted men. All the students in college at any period assemble for one hour each week throughout the college year. More than half of the assembly sessions are devoted to interests and activities developed by the students themselves. The other assembly periods are devoted to special lectures, sometimes under the direction of the student body and sometimes under the direction of the faculty. The special lectures are devoted to those elements of life which count most in the development of a man's viewpoint and his character.

Equipment for Physical Training

Northeastern has exceptional facilities for all-round physical training. The gymnasium is one of the most complete in New England. Adjoining Richards Hall is a large field equipped for athletics. Here are two tennis courts, an outdoor gymnasium, a rifle range, a baseball cage, jumping pits, and a track with a 100-yard straightaway.

Natatorium and Gymnasium

The Natatorium is located in the East Building between the assembly hall and gymnasium. It is 75 feet long and 25 feet wide and is generally regarded as one of the finest of its kind in this area.

The Gymnasium is known as the Samuel Johnson Memorial Gymnasium and provides the following facilities: three gymnasiums, a twelve-lap running track, two large exercise rooms, boxing and wrestling rooms, handball and squash courts, bowling alleys, showers, steam baths, massage rooms, electric cabinet baths, and locker rooms.

Huntington Field

Huntington Field, the University athletic field, is located on Kent Street in Brookline and provides ample facilities for track, baseball, football and other outdoor sports. The University maintains bus service between its Huntington Avenue plant and the Huntington Field making it possible for students to get back and forth with a minimum loss of time. The field is equipped with a commodious field house as well as ten sections of stadium seats for spectators.

Student Activities

NORTHEASTERN University regards student activities as an integral part of its educational program. One of the main departments of the University is charged with the responsibility of co-ordinating the various types of activities and of administering the social, musical, literary, and athletic organizations in such a way as to enable each to contribute in a wholesome, worth while manner to student life at Northeastern. Every student is encouraged to participate in such activities as may appeal to him, although a standard of scholarship which is incompatible with excessive devotion to such pursuits is required of all students.

Members of the faculty also are interested in the informal aspects of the college program. Teaching loads are kept sufficiently low so that the instructional staff may have ample opportunity to mingle with students outside of the classroom in social activities and on the athletic field. In fact, some member of the faculty is appointed to serve as adviser for each student activity. His function is not to dictate how the organization shall be run, but to encourage the students in their extra-curricula endeavors and to give them the benefit of his mature point of view in solving the problems that inevitably arise.

One of the outstanding contributions of the co-operative plan in the field of higher education has been its capacity to develop in students those powers of social understanding that are so essential to success in professional life. At Northeastern the program of student activities is made to contribute to this end in a very real way. It is a conscious aim of the student activities advisers to develop among their advisees those qualities of personality and character which will enhance their usefulness as future professional men and citizens. Students have splendid opportunities to develop administrative and executive ability as leaders of undergraduate organizations. No academic credit is awarded for any student activity. This has been no deterrent, however, to student participation in extra-curricula activities, for a recent survey of the undergraduate body showed that over 90% of the enrollment were engaged in one or more forms of student activity.

Student Council

Student government of the Day Colleges at Northeastern University is vested in the Student Council, composed of elected representatives from the various classes. The Council is the authority on all matters relating to student policies not definitely connected with classroom procedure. It has jurisdiction, subject

to faculty approval, over all such matters as customs, privileges, and campus regulations. The Dean of Students serves as faculty adviser to the Student Council.

Northeastern Student Union

The purpose of the Northeastern Student Union is to carry out the work of a Christian association within the University. It endeavors to deepen the spiritual lives of Northeastern men through the building of Christian character, to create and promote a strong and effective Northeastern University spirit in and through a unified student body, to promote sociability, and to emphasize certain ethical, social, civic, intellectual, economic, physical, vocational, and avocational values.

All students are encouraged to participate in the activities of the Union, no matter what their religious faith, as the work of the Union is entirely non-sectarian. A good moral character is the only requirement for eligibility to membership. It is hoped that as many students as can will participate in this ideal extra-curricula work.

The Union conducts a weekly Chapel Service in the little chapel in Richards Hall, to which all faculty members and students are invited. The service, which is non-sectarian and voluntary, is held on Thursday mornings from 8:40 to 8:55 o'clock. Many eminent preachers of Greater Boston are engaged to deliver brief addresses.

Athletic Association

All students in the Day Colleges are members of the Northeastern University Athletic Association. Policies of the association are passed upon by a Faculty Committee on Student Activities. This committee decides what students are eligible to participate in athletics, what the various sports schedules shall be, and what students may be excused from classes to represent the University on athletic trips.

The actual administration of the athletic program is in the hands of a second committee, known as the General Athletic Committee, which consists of the Director of Student Activities, the captains and managers of all varsity teams, and the coaches as ex officio members.

The University maintains both varsity and freshman teams in baseball, basketball, cross-country, football, hockey, and track. Intercollegiate games and meets are arranged with the leading colleges in the East. In addition to intercollegiate athletics the athletic association conducts an intramural program in various sports.

Publications

"The News"

A college newspaper, the *Northeastern News*, is published each week throughout the college year by a staff selected from the student body. The copy is prepared, edited, and published by the students themselves with the counsel of a faculty adviser. Opportunity is afforded for the students to express their opinions on subjects relating to study, co-operative work, social events, or topics of the day. Positions on the *News* staff and promotions are attained by competitive work. The paper is in part supported by advertising, both national and local, and in part by a portion of the student activities fee. The *Northeastern News* is a member of the Eastern Intercollegiate Newspaper Association, and sends one of its editors to the annual convention of this association each year. Copies of the *News* are mailed to upperclassmen when they are at co-operative work and to freshmen after the close of their college year.

"The Cauldron"

The combined senior class publishes annually a college year book, *The Cauldron*. It is ready for distribution in the latter part of the second semester and contains a complete review of the college year with class histories, pictures of all seniors, of the faculty, and of undergraduate groups, as well as a miscellany of snapshots and drawings contributed by students.

Honor Societies

Three honorary societies are chartered by the University in its Day Colleges:

Tau Beta Pi, in the College of Engineering.

The Sigma Society, in the College of Business Administration.

The Academy, in the College of Liberal Arts.

Election to the college honorary societies is founded primarily upon scholarship, but before a man is privileged to wear the honorary society insignia he must give evidence of an integrity of character and an interest in the extra-curricula life of the University as well as an acceptable personality. The Societies have memberships consisting of the outstanding men in the Day Colleges. Election to the honorary society is the highest honor that can be conferred upon an undergraduate.

Professional Societies and Clubs

To assist in the promotion of social, cultural, and intellectual advancement through informal channels, a number of professional societies and clubs are sponsored.

National Engineering Societies

Students in the several professional curricula of the College of Engineering operate Northeastern University Sections of the appropriate national professional societies. Chief among these are the following:

- American Society of Civil Engineers
- Boston Society of Civil Engineers
- American Society of Mechanical Engineers
- American Institute of Electrical Engineers
- American Institute of Chemical Engineers
- Society for the Advancement of Management
- American Chemical Society

Members of the engineering faculty who hold membership in the parent organizations serve as advisers to these student groups. Meetings are held regularly, usually at night so that students from both divisions may attend, and practicing engineers are invited to address the sections. Occasionally appropriate motion pictures are shown, or the group visits some current engineering project in the vicinity of Boston. The College of Engineering encourages these student sections of the technical societies in the belief that they provide a wholesome medium for social intercourse as well as a worth while introduction to professional life.

Membership in the student sections of the American Society of Civil Engineers and Boston Society of Civil Engineers, the American Society of Mechanical Engineers, or the American Institute of Electrical Engineers also includes membership and privileges of the Engineering Societies of New England. This organization is an affiliation of all the major technical societies of Boston and vicinity and provides valuable lectures, smokers, and informal meetings with the outstanding men engaged in engineering work in Boston and vicinity.

Astronomy Club

Membership in the Astronomy Club is open to all students in the College of Engineering who maintain satisfactory scholastic standing. The club has access to machine shops for the construction of telescopes and other instruments. It also has quarters in the penthouse on the fifth floor of Richards Hall. Meetings are held twice a month for the purpose of making astronomical observations and carrying on appropriate discussions.

Banking and Finance Club

The purpose of this organization is to increase among its members the knowledge of the theory and practice of banking. Any student of Northeastern University, while enrolled in any of the banking courses of the College of Business Administration, is

eligible to active membership in this club. Meetings are held each ten week period at which banking executives from Greater Boston are invited to discuss current issues in the field.

Camera Club

The Camera Club welcomes all men interested in photography. Weekly discussions and special evening lectures by guest artists are part of the yearly program. Field trips, monthly photo contests and a general exhibition add to the interest and progressive work of this organization.

Chess Club

The Chess Club gives both beginners and experts an opportunity to enjoy the game. Yearly tournaments are held among the members and, in past years, the best men have engaged in inter-collegiate competition.

Combined Musical and Dramatic Clubs

The Department of Student Activities sponsors musical clubs, such as the following: a concert orchestra, a band, a glee club, a banjo club, and a dance orchestra, for which all students with musical ability are eligible. Membership in the various musical clubs is attained by competitive effort.

Each organization has a faculty adviser and each elects a representative to the Musical Clubs Council. The purpose of this council is to co-ordinate the various musical activities of the Day Colleges. At the annual Musical Clubs Banquet, held early in the spring, charms are awarded to the leaders and managers of the several clubs and to members who have played over a period of three full years.

The various musical clubs, in conjunction with the Dramatic Club, combine in an annual mid-winter entertainment and participate in occasional outside public engagements throughout the college year.

Students interested in dramatics have an opportunity to cultivate this art under faculty coaches who co-operate with the Dramatic Club in the production of several pieces in the course of each college year.

Debating Society

The purpose of the Debating Society, formed in 1936, is "to foster and promote an interest and facility in formal argumentation; to develop an impartial, unbiased, and intellectual consideration of questions and issues of current interest; and to sponsor intercollegiate relationships and competition in the debating field." Membership is open to all students of the Day Colleges.

German Language Club

Students are given an opportunity in this club to use their knowledge of German in ways that give them entertainment as well as a greater appreciation of foreign customs and literature.

International Relations Club

The International Relations Club was founded in 1932 for the purpose of studying and discussing those current national and international events and issues which vitally concern our American life and institutions.

It is the intention of the club to deal with all questions in an impartial and broadminded manner, and to take an intelligent and effective part in promoting international understanding and harmony. The club maintains contacts with similar organizations in other colleges.

Membership is not open to freshmen, and only to those upperclassmen who maintain good scholarship.

Law and Accounting Club

All students interested in accounting and law are invited to join this stimulating club. Problems and cases involving the interrelations of accounting and law are presented and discussed at club meetings. Although upperclassmen usually present problems arising out of thesis or co-operative work, speakers from the professional world come to the meetings to present papers and lead the student discussion.

Mathematics Society

The Mathematics Society encourages the study of topics of mathematical interest which are either outside or beyond the scope of the regular mathematics courses. Membership is restricted to those men who have completed one and one-half years of study in mathematics and have an average grade of not less than "C" in mathematics courses up through differential calculus. The club meets once every five weeks in the evening. Although membership is limited to upperclassmen, any student is always welcome to any meeting, and freshmen especially interested in mathematics are always welcome.

The final program of the year is devoted to a dinner meeting for which some prominent outside speaker is procured.

Radio Club (Suspended for the duration of the war.)

One of the most popular undergraduate activities is the Radio Club. Members are provided opportunity for code practice and are encouraged to obtain their amateur licenses. The club owns and operates station W1KBN, a short wave transmitter, located in the Radio Laboratory in the penthouse of Richards Hall.

Meetings are held about once a month for the discussion of technical matters. Practicing radio engineers are frequently invited to address the club at evening meetings, when students in both divisions may attend.

Rifle Club

Organized a number of years ago, the Rifle Club was so successful that in 1933 riflery was recognized as a minor sport. Members of the club are given instruction in the art of rifle shooting. Those students who excel in intra-mural competition are selected for the team representing the University in intercollegiate contests. Practice sessions are held twice a week in the University rifle range. Membership is open to all students. Northeastern is a member of the New England Intercollegiate Rifle League and the National Rifle Association.

Yacht Club

Only recently formed, the Yacht Club is a member of the Intercollegiate Yacht Racing Association. The club participates in regattas held in the Charles River Basin and also in regattas held at other colleges.

Class Organization and Activity

Each of the classes in the Day Colleges elects its officers and carries on activities as a class. Dances are sponsored by the classes at regular periods throughout the year. One of the high lights of the social program is the Junior Promenade, held each spring at one of the Boston hotels.

Seniors plan a number of activities just prior to Commencement.

Freshmen are required to wear the red and black cap distributed through the Department of Student Activities in order that they may be readily distinguishable to each other and to upperclassmen. (This requirement suspended for the duration of the war.)

Convocations

The hour from 12:00 to 1:00 on Wednesdays throughout the year is set aside for convocations. Attendance is compulsory. Arrangements are made to bring before the student body some of the ablest and foremost thinkers of the day. A list of speakers for the year will be found on page 17 of this catalogue. When the convocation hour is not occupied by a University lecturer, class meetings, concerts, or athletic rallies are held instead. Such gatherings are under the direction of the Department of Student Activities.

Fraternities

There are at present ten local Greek letter fraternities chartered by Northeastern University. Each fraternity is provided with a faculty adviser who is responsible for the proper administration of the fraternity house under the rules and regulations established by the faculty. The list of fraternities in the order of their establishment is as follows:

- | | |
|-----------------------|--------------------|
| 1. Beta Gamma Epsilon | 5. Phi Beta Alpha |
| 2. Alpha Kappa Sigma | 6. Phi Gamma Pi |
| 3. Nu Epsilon Zeta | 7. Sigma Phi Alpha |
| 4. Sigma Kappa Psi | 8. Kappa Zeta Phi |
| 9. Gamma Phi Kappa | |

Elected representatives from each fraternity make up an Inter-Fraternity Council, a body which has preliminary jurisdiction over fraternity regulations. Its rulings are subject to the approval of the Faculty Committee on Student Activities.

The Alumni Association

The alumni of the Day Colleges are organized to promote the welfare of Northeastern University, to establish a mutually beneficial relationship between the University and its alumni, and to perpetuate the spirit of fellowship among members of the Alumni Association.

The work of the General Alumni Association is supplemented by the activities of regional alumni clubs located throughout the east and middle west. The local clubs meet periodically in their respective centers to discuss matters pertaining to the University and its alumni. Meetings are also held in conjunction with the visits of Northeastern's athletic teams to the various club centers.

Officers of the Alumni Association

<i>President</i>	<i>Secretary</i>
GEORGE A. MALLION '20	SUMNER B. BRUNS '35
<i>Vice President</i>	<i>Treasurer</i>
JAMES W. DANIELS '25	JOHN E. VADALA '31

Executive Committee

HAROLD L. BURTON '29	RAYMOND W. JAMES '32
CARL M. WEAVER '34	EDWARD V. KIRKLAND '35
WALLACE E. MACQUARRIE '40	RUDOLPH A. LOFGREN '27

Alumni Executive Secretary
RUDOLF O. OBERG '26

Alumni Faculty Representative
WARREN L. GANONG '37

Alumni Council Representatives

1913-1920—	1930—HARRY C. STEDT
BERNARD H. CAPEN '20	1931—THOMAS E. RUSHFORTH
JAMES A. KNOWLTON '19	1932—ALBERT E. JOHNSON
PERRY F. ZWISLER '17	1934—HORACE S. MILES
1921—ROGER E. SPEAR	1935—WARNER M. ABBOTT
1922—LAURENCE S. FAUNCE	1936—WILLIAM E. DINGWELL
1923—EDWARD J. PERRY	1937—LESLIE W. LENFEST
1924—H. RAYMOND BENSON	1938—GEORGE C. LECK
1925—RENE G. MAURETTE	1939—WILLIAM E. FEIDT
1926—CHARLES M. MCCOOMBE	1940—ALBERT S. MAKAS
1927—WILLIAM J. URQUHART	1941—DAVID C. GERRY
1928—HOWARD F. KNOWLES	1942—WILLIAM W. ROBINSON
1929—JAMES H. KINGHORN	

THE COLLEGE OF BUSINESS ADMINISTRATION

Aims and Methods

FORMERLY when a student finished high school and decided to make his way in the business world he could go about it in one of two ways: (1) Obtain a position in a particular field of commerce or industry and by beginning at the bottom learn the business from the job of the office boy to that of the president, or (2) enter a liberal arts college and after four years of general study enter business just as he would have had he not attended college. It was hoped that his broad college training and collegiate contacts would push him along "through the ropes" faster than the young man who went straight into business from high school. In either event this system of apprenticeship worked out very well in training a man in business and those who had the push and ability went to the front. This continued just so long as business organization was limited to relatively small units. In the small business there was time and opportunity for employer and employee — boss and apprentice — relationships. A man could learn much from his superiors, and recognition in the way of promotion in salary or responsibility rewarded those whose ability warranted it.

The Problem of Today

What of today? Can a student go "through the ropes" and progress today as his father did in his youth and early manhood? The answer is: probably not. We can see just reason for the negative answer when we consider our present business world. We are surrounded on every hand by "big business" where the employee is lost in the vast number of workers of every large organization. The old time employer who trained his own men is passing out of the business scene. This does not mean that there is any less need for training about the conduct of business. It does mean that the training has to be done by some other person or institution especially equipped to do the job in a most thorough manner. Actually the training for business positions of real importance is more necessary today than ever before. To satisfy this very apparent need colleges of business administration have appeared and grown in size and importance within the last twenty-five years. Among institutions for the training of young men who intend to undertake business as a profession, Northeastern University offers to those properly qualified a college training in business administration, leading to the degree of Bachelor of Science in Business Administration.

Business Education on the College Level

Although it is true that collegiate training for business is relatively new in the field of higher education, it is also evident that collegiate business schools are beyond the stage of early experimentation and have emerged on a level with other college courses recognized as higher education. There is a certain advantage in newness in that the mere youth of the college keeps it up-to-date in its outlook and scope of activity. In addition it is not bound by the traditional but obsolete practices sometimes found in older branches of education.

We hear a good deal today about the increasing need for specialists in business. It is asserted that modern business institutions have become so large that no one man can administer the many matters of routine involving executive judgment. The need for specialists is self-evident, but the training best suited for preparing the individual to take over specialized executive authority is not so evident. There are many schools offering a short course of training in preparation for these specialized positions. Such training cannot give a man the breadth of vision needed to go beyond minor managerial jobs demanding attention to exhausting details of daily routine.

To pass beyond this on the way to responsibility of truly executive nature a background of general business and related knowledge is essential. This background should precede the specialized study into a particular branch of business, enabling one to see the whole business and industrial picture and not merely one branch of it. Executive administration cannot be taught with any adequacy by attacking one subject, no matter how carefully planned the approach and how thorough the course of study. For instance, accounting is not the only means of arriving at a production budget based on sales estimates; it is but one of the tools. A knowledge of marketing, finance, statistics, and management technique are also needed. Vision and sound judgment can then make all of these branches of information serve to best advantage.

Aims of the College

In keeping with current trends in collegiate business education the educational policy of the College is directed toward the achievement of the following purposes:

First: To offer that type of education for business which will enable students to select most advisedly the field of business best suited to their aptitudes. The co-operative plan is particularly effective in this respect.

Second: To build for breadth of perspective in preference to over-specialization with its narrowing effects; therefore, to elim-

inate haphazard selection of courses, through concentration upon balanced, carefully co-ordinated curricula, and thus to provide an adequate background for specialization as need arises.

Third: To provide a thorough knowledge of fundamental economic laws and an understanding of their applications in business.

Fourth: To develop the habits of accurate thinking that are essential to sound judgment.

Fifth: To develop in all students attitudes and ideals that are ethically sound and socially desirable.

Methods

In order that these aims may be realized as fully as possible, the College makes use of the problem and the case methods of instruction in addition to the lecture and recitation system. Mere textbook reading alone is almost valueless; students tend to accept without question what the textbook presents. Instead, they should learn to analyze every proposition, to challenge unsupported assertions, to think independently, and to support their thinking with logic and facts.

Hence, concrete problems and cases which executives have faced in accounting, marketing, organizing, and the like, constitute the bulk of class work. Students analyze problems, break them into their constituent parts, discover and list the factors for and against possible solutions, and work out a logical conclusion. In class they discuss their work with their instructors in the light of the latter's broader knowledge.

Such a method tends to develop an executive attitude. No lecture or mere reading of textbooks can do so. Students gain skill and facility in solving problems by actually solving many hundreds of them, thereby accumulating a ripe experience seldom open to the petty employee buried in routine and mechanical detail. What counts in business, as elsewhere, is not solely whether one possesses much knowledge, but whether through his knowledge one can logically and effectively solve the problems he confronts, or possibly prevent problems from arising. Experience in solving typical problems provides a background for anticipating and forestalling similar ones as well as for solving others that may arise.

Equipment

Visual Education Equipment

Classroom instruction is made more effective by the use of motion pictures and lantern slides. For this purpose there are available projectors for 16 mm. and 35 mm. films. Complete

sound motion picture apparatus is also available. New and powerful Delineascopes project the lantern slides. Stationary as well as portable day light screens enable students to take notes while viewing the pictures.

Business Laboratory

Students have available for laboratory work in accounting and statistical methods all of the commonly used office machines. These are available in a special room together with necessary library services, including Moody's Manuals, Poor's Manuals, and various charts and maps.

The laboratory is in charge of a graduate assistant whose work is to maintain the equipment in excellent condition and to give instruction in the use of the various office machines.

Principal pieces of equipment in the laboratory include duplicators, typewriters, hand and electric calculators, and both hand and electric adding machines.

Bureau of Business Research

The primary purpose of a College of Business Administration is to train young men in business, but it has also an obligation to the business community to co-operate in the improvement of its business practices and the solution of its everyday business problems. One means of fulfilling this obligation is to co-operate with business and industrial leaders in the conducting of research investigations pertaining to these problems. To these ends the Bureau of Business Research of the College of Business Administration at Northeastern University was organized.

The staff of the Bureau investigates and reports research projects under the direction of a faculty Board of Editors within the scope of the following stated purposes and policies:

- I. To co-operate with business and industry in the development, perfection, and reporting of improved technics and practices of management.
- II. To make studies and conduct research into the problems of New England business and industry with respect to:
 - (1) Community industrial and business development.
 - (2) Expansion of markets for New England industry and business.
 - (3) Those aspects of New England business which militate against harmony between the community and its business enterprises.

Research reports of the Bureau are published as a part of the Northeastern University series of publications. They are distributed without charge upon application to the Director of the Bureau.

Admission Requirements

APPPLICANTS for admission to the freshman class without restrictions must qualify by one of the following methods:

1. Graduation from an approved course of study in an accredited secondary school, including prescribed subjects listed below.

2. Completion of fifteen acceptable secondary school units with a degree of proficiency satisfactory to the Department of Admissions.

3. Examinations.

(Certificate of entrance examinations passed for admission to recognized colleges and technical schools may be accepted.)

Prescribed Subjects for Admission

College of Business Administration

Mathematics (Algebra recommended)	1 unit
Natural Science	1 unit
History, Social Studies and/or foreign language	3 units
English	3 units
*Electives	7 units
Total	15 units

A unit is a credit given to an acceptable secondary school course which meets at least four times a week for periods of not less than forty minutes each throughout the school year.

Entrance examinations are not required of students whose transcripts of record are acceptable, but the Committee on Admission reserves the right to require a candidate to present himself for examination in any subjects that it may deem necessary because of some weakness in his secondary school record.

Other Requirements

These formal requirements are necessary and desirable in that they tend to provide all entering students with a common ground upon which the first year of the college curriculum can be based. But academic credits alone are not an adequate indication of a student's ability to profit by a college education. Consequently the Department of Admissions takes into consideration, along with the formal requirements stated above, many other factors regarding candidates for the freshman class. A student's interests and aptitudes in so far as they can be determined, his capacity for

*Not less than four of the "electives" must be in one or more of the following academic branches: Languages, Natural Science, Mathematics, Social Sciences, History.

hard work, his attitude toward his classmates and teachers in high school, his physical stamina, and most important of all — his character, all these considerations are carefully weighed. In this way the University seeks to select for its student body those who not only meet the academic admission requirements but who also give promise of acquitting themselves creditably in the rigorous program of training afforded by the co-operative plan and of later becoming useful members of society.

Personal Interview

Candidates for admission should communicate with the Director of Admissions, who will advise them frankly on the basis of past experience. A personal interview is always preferred to correspondence, and parents are urged to accompany their sons whenever this is possible. Effective guidance depends in large measure upon a complete knowledge of a candidate's background and problems. Parents invariably are able to contribute much information that aids the admissions officer in arriving at a decision. In general, a student is likely to be more successful in his college work if he does not enroll under the age of seventeen.

Candidates are urged to visit the Office of Admissions for personal interview if it is possible for them to do so before submitting their applications. Office hours of the Department are from 9:00 A.M. to 4:00 P.M. daily; Saturdays to 12:00 M. The Director of Admissions will interview applicants on Wednesday evenings but by appointment only.

Application for Admission

Each applicant for admission is required to fill out an application blank whereon he states his previous education, as well as the names of persons to whom reference may be made in regard to his character and previous training.

An application fee of five dollars (\$5.00) is required when the application is filed. This fee is non-returnable.

The last page of this catalogue is in the form of an application blank. It should be filled out in ink and forwarded with the required five dollar fee to the Director of Admissions, Northeastern University, Boston, Mass. Checks should be made out to Northeastern University.

Upon receipt of the application, properly filled out, the College at once looks up the applicant's references and secondary school records. When replies have been received to the various inquiries, the applicant is informed as to his eligibility for admission.

Applications should be filed not later than April 15, thus allowing ample time for the investigation of the applicant's secondary school records before he enrolls in the College.

The University reserves the right to place any entering student upon a period of trial. Whether he shall be removed from trial at the end of this time or requested to withdraw will be determined by the character of the work he has accomplished and his conduct during this trial period.

Registration

Eligibility for admission does not constitute registration. Freshmen will register at the University on May 3, 1943, or July 12, 1943. No student is considered to have met the requirements for admission until he has successfully passed the required physical examination.

Advanced Standing

Students transferring from approved colleges will be admitted to advanced standing provided their records warrant it. Whenever a student enters with advanced standing and later proves to have had inadequate preparation in any of his pre-requisite subjects, the faculty reserves the right to require the student to make up such deficiencies.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their initial inquiry. Students admitted to advanced standing are not eligible for placement for co-operative work until they have completed a full year of academic work at the University.

Entrance Examinations

Students who are deficient in required units for admission may remove these deficiencies by examination. Such examinations are held at the university unless special arrangements are made with the Department of Admissions to administer them elsewhere.

Students are advised to take such examinations on the earliest possible date in order that any deficiencies which they fail to clear may be made up in time to permit registration with the desired class and division.

The time of examinations is as follows:

10:00 A.M. to 12:00 M.
1:00 P.M. to 3:00 P.M.

During the current year examinations will be given in April and June. All other examinations will be given by special assignment.

Requirements for Graduation

Students may qualify for the degree of Bachelor of Science in Business Administration in one of the following options:

Accounting, Marketing and Advertising, Public Administration, Banking and Finance, Industrial Administration, Journalism.

Candidates for the Bachelor of Science degree must complete all of the prescribed work of the curriculum in which they seek to qualify with a degree of proficiency acceptable to the faculty. Students who undertake co-operative work assignments must also meet the requirements of the Department of Co-operative Work before they become eligible for their degrees.

No student transferring from another college or university is eligible to receive the B.S. degree until he has completed at least one academic year at Northeastern immediately preceding his graduation.

Scholarship Requirements

Any student who fails to show a satisfactory standard of general efficiency in his professional field may be required to demonstrate his qualifications for the degree by taking such additional work as the faculty may prescribe. If he is clearly unable to meet the accepted standard of attainment, he may be required to withdraw from the University. The degree conferred not only represents the formal completion of the subjects in the selected course of study but also indicates professional competence in the designated field of business administration.

Graduation with Honor

Candidates who have achieved distinctly superior attainment in their academic work will be graduated with honor. Upon special vote of the faculty a limited number of this group may be graduated with high honor or with highest honor. Students must have been in attendance at the University at least three years before they may become eligible for honors at graduation.

Thesis Option

Theses are not required of candidates for the degree of Bachelor of Science in Business Administration. Students who show special aptitude for thesis work, however, may be permitted to substitute an appropriate thesis for equivalent work in class. Such permission must be obtained by the candidate from the Dean of the College.

The Programs of Study

First Year

A FULL YEAR of thirty-five weeks is devoted to a thorough understanding of the basic principles underlying the conduct of business.

The student is also acquainted with the existing business structure and given an appreciation of its conception and growth in terms of the distribution of industrial resources, and the historical development of business and industry.

Other basic courses are in keeping with the personal needs of the student and preparatory to the work which follows in the upper years of his course. Throughout the year each student has the friendly counsel and guidance of a faculty adviser whose aim is to help bridge the gap between high school and college.

Second Year

Co-operative training is started in the second year. Two ten-week terms of college work are required. Twenty-six weeks of business practice with co-operating firms may be included. Special attention is given to the student's prospective needs during and after his college career by way of expressing himself orally and in writing, giving particular attention to the development of an effective style for business writing of every sort.

Third Year

In the third year, the completion of the foundation program gives way to the beginnings of specialized training. The student rounds off his work in the third year through the study of economic problems, corporation finance, marketing, and a course in advanced accounting.

At the end of the third year the students elect the professional curricular offerings in accordance with their major fields of interest and natural aptitudes.

The Professional Options

All students are required to take common courses in their fourth and fifth years which are deemed necessary for a well rounded training. These are pursued jointly with the professional

work which has been selected, with a view to meeting the changing and expanding needs of present day business conduct, while at the same time meeting the vocational needs of the students by way of earning a living. A brief statement of the vocational opportunities in the fields of work represented by each of the professional options follows:

I. Accounting

Many successful careers are open to the professional accountant. His services are demanded by business, commerce and industry. Public and private enterprises seek adequately trained men. Better known among the wide variety of titles descriptive of their work are: public and private accountant, cost accountant, resident and traveling auditor, credit manager, statistician, investigator, adjuster, and financial accountant.

II. Banking and Finance

Financial institutions serving present day business and industry are its life stream. Any list of these organizations which are indispensable in the conduct of business must include: banks, insurance companies, investment houses, credit concerns, financial exchanges, business forecasting organizations, financial service institutions, mortgage companies, national and local real estate brokerage firms, and appraisers.

Specific courses offered in Northeastern University's College of Business Administration open the door to a host of careers in these institutions as well as the many governmental regulatory agencies controlling their operations.

III. Marketing and Advertising

Business and industry must sell their services and products to each other and to the general public. Successful selling means more than being a salesman. It demands knowledge of distribution channels, markets and buying habits, as well as sales resistance. It means also, knowing how to buy in order to sell and then how to organize, promote, and carry out a sales campaign.

The following list is representative of the vast array of marketing and advertising occupations: sales manager, supervisor, analyst and correspondent, advertising manager, promotion manager, copy supervisor, space buyer, and publicity director; market,

product and sales analyst, industrial salesman, sales personnel supervisor, field representative, missionary salesman, and manufacturer's agent.

IV. Industrial Administration

Increasingly the manufacturer is looking to the business school for well trained men to undertake cost work, production control, planning, methods analysis, and the solution of sales problems peculiar to the manufacturer. Moreover, industrial administrators are increasingly turning attention to the effective administration of better employer-employee relations. This points the way toward a growing need for trained managers of personnel relations.

The vocational opportunities of industrial administration include: personnel management, traffic management, office management, industrial purchasing; manufacturing, supervisory and executive work, inventory and production control, production planning, setting shop standards, wage rate administration, and supervision of shop personnel.

V. Public Administration

The tremendous increase in the number of agencies regulating both public and private enterprise has opened up an increasing number of desirable career posts in both the state and federal governments. These afford real opportunities for those who have training in the fundamentals of business, together with special training in the problems of administration as related to government work. The typical positions include: division chiefs, bureau heads, department heads, foreign and domestic representatives of the many departments, bureaus and agencies of our government.

VI. Journalism

No professional field of work commands greater public attention and respect than journalism. The development, promotion, operation, and management of the many city, town, and country newspapers, multitudinous magazines, journals, house organs, company newspapers, etc., require sound business training and definite knowledge of the relationships of business management, including advertising, sales promotion as well as an ability to write.

The business school graduate is at a premium, therefore, in the field of journalism. The publishing business is one requiring an executive personnel that is both broad and well trained. The specialist in this field handles circulation as well as advertising, and distribution as well as production of the publication itself.

Pre-legal Curriculum

Effective September 1, 1938, by a ruling of the Supreme Judicial Court of Massachusetts, in order to be eligible for examination for admission to the Bar, an applicant must have completed certain general educational requirements before beginning his legal education. Briefly, this general education must comprise graduation from a four-year high school and the completion of not less than half of the work accepted for the Bachelor's degree in a college approved by the Board of Bar Examiners.

Recognizing that business training furnishes an excellent background for pre-legal training, the College of Business Administration offers a pre-legal curriculum. This consists of taking an amount of work in the College equivalent to that required for admission to specific law schools in the Commonwealth, and usually requires residence in school during the entire freshman year and for 30 weeks during the sophomore year. The approximate cost for the normal pre-legal program is \$600. Students should consult with the Dean of the College before electing a pre-legal program.

Four-Year Option in Business Administration

In view of the present national emergency, students in the College of Business Administration who have completed the first three years of their scholastic program may petition to attend school for forty consecutive weeks during their fourth school year. This makes possible completion of the requirements for the degree of Bachelor of Science in Business Administration in four years instead of five. Students wishing to make such a petition must consult with the Dean of the College.

No petitions will be granted except as students have a satisfactory scholastic record and are free from obligations to employers under co-operative work agreements.

Curricula in Business Administration

The Freshman Year

In order to bring the course programs of the College of Business Administration more in line with the needs of war training, first year students are allowed to elect one of two alternate programs. These are the regular program and the V-1 program. This latter is offered to those students who expect to qualify for naval officer training. It is recommended that all students who wish to qualify for commissions in any branch of the military service take the V-1 program.

First Year					
FIRST TERM			SECOND TERM		
No.	Course	Semester Hours	No.	Course	Semester Hours
<i>Regular Program</i>					
E1-B	English.....	3	E2-B	English.....	3
Ec 1	Economic Geography..	3	Ec 2	Economic and Comm. Hist. of the U. S....	4
Ac 1	Accounting I.....	4	Ac 2	Accounting II.....	4
H 1	History of Civilization..	4	H 2	History of Civilization..	4
Gv 1	American Government	3	Gv 2	American Government	3
PE 1	Hygiene.....	1		Orientation.....	0
PE 3	Physical Training.....	0	PE 4	Physical Training.....	0
		<u>18</u>			<u>18</u>
<i>V-1 Program</i>					
E1-B	English.....	3	E2-B	English.....	3
Ec 1	Economic Geography..	3	Ec 2	Economic and Comm. Hist. of the U. S....	4
Ac 1	Accounting I.....	4	Ac 2	Accounting II.....	4
M 31	Mathematics I.....	3	M 32	Mathematics II.....	3
P 31	Intro. to Physics.....	4	P 32	Intro. to Physics.....	4
PE 1	Hygiene.....	1		Orientation.....	0
PE 3	Physical Training.....	0	PE 4	Physical Training.....	0
		<u>18</u>			<u>18</u>

The curricula in the second and third years are common in all fields of specialization and are listed below.

Second Year					
L 1	Legal Bases of Business	2	L 2	Legal Bases of Business	2
Ec 3	Economic Principles...	2	Ec 4	Economic Principles...	2
Ac 5	Cost Accounting.....	4	Ac 6	Cost Accounting.....	4
IA 1	Indus. Management I..	2	IA 1	Indus. Management II..	2
E3-B	Bus. Communication..	2	E4-B	Bus. Communication..	2
		<u>12</u>			<u>12</u>
Third Year					
Ec 5	Economic Problems....	2	Ec 6	Economic Problems....	2
FI 1	Business Finance.....	2	FI 2	Finance Problems.....	2
Ac 7	Accounting Problems..	3	Ac 8	Accounting Problems..	3
MA 1	Marketing Principles...	3	MA 2	Marketing Principles...	3
S 1	Sociology.....	2	S 2	Sociology.....	2
		<u>12</u>			<u>12</u>

Fourth and Fifth Years

The courses in the fourth and fifth years can be elected from among the courses detailed in the pages which follow. Elections should be concentrated in the field of specialization chosen. Approval of the Dean of the College must be secured for the election of all courses in these last two years.

A total of 142 semester hours credit is required for the degree. Of the 142 hours, ten semester hours of credit can be earned by the satisfactory completion of eighty weeks of cooperative work.

*Synopses of Courses of Instruction**

On the pages which follow are given the synopses of courses offered in the several curricula of the College. Courses offered in the first semester bear odd numbers; those offered in the second semester bear even numbers.

Freshmen courses extend over a full semester of 18 weeks. Upperclass courses are uniformly 10 weeks in length each term. The University reserves the right to withdraw any course in which there is insufficient enrolment.

Accounting

AC 1 Accounting I

This course presents the fundamental principles of accounting theory and practice in a manner designed to meet the needs of students who intend to specialize in accounting as well as those who require a knowledge of accounting as a preparation for the study of banking and finance, production management, and marketing. Beginning with a consideration of the need for and the purpose served by accounting, a study of the balance sheet and operating statement is presented so that the ultimate goal and purpose of accounting is understood before the mechanical methods of recording business transactions are presented. The course then takes up specific balance sheet accounts; the law of debit and credit; the theory of nominal accounts; construction and interpretation of accounts; the recording process; the trial balance; construction of financial statements; the need for adjustments at the end of the period; depreciation; deferred and accrued items.

4 semester hour credits

AC 2 Accounting II

This course continues the work of the first semester with increased emphasis placed on accounting and interpretation of accounts. The main topics covered are closing of books, starting the new period, comparative statements, control accounts, and the operation of petty cash systems.

4 semester hour credits

AC 5 Cost Accounting

The structure of factory costs from the executive's viewpoint is studied in this course. The subject is approached chiefly from the management point of view. Problems are presented in a sum-

*For definition of pre-requisite and preparatory courses, see page 98.

marized form in order to stress the fundamental aspects of costs. Managerial control through the use of accounts is emphasized at the beginning of the course. Some of the specific topics covered are accumulation and distribution of cost data, process cost, job cost, historical cost, estimated cost, standard cost, and spoilage cost.

Pre-requisite: AC 2

4 semester hour credits

AC 6 Cost Accounting

This course is designed to develop in the student the managerial ability to control production, operating, and distribution costs through the use of cost accounting and the budget. Methods of costing and controlling materials, labor, and expenses are considered in detail. Cost variations are analyzed. Joint cost and by-product cost are introduced.

Pre-requisite: AC 2

4 semester hour credits

AC 7 Accounting Problems

The aim of this course is to develop the broad viewpoint, analytical power, and constructive and critical ability necessary to apply properly a knowledge of accounting principles to specific problems and situations. Consistency in the application of principles is stressed. The major portion of the course is devoted to the study of specific problems dealing with capital and revenue expenditures; depreciation, appraisals and reserves; branch accounting; and analysis of statements.

Pre-requisite: AC 2

3 semester hour credits

AC 8 Accounting Problems

The method of approach in this course is like that followed in AC 7, with greater emphasis on the financial aspects of a business. Specific topics deal with bonds, annuities, sinking fund, reserves, investment accounting, application of funds, consignment sales, correction of statements, venture accounts, receivers accounts and insurance.

Pre-requisite: AC 2

3 semester hour credits

AC 9 C.P.A. Problems

The purpose of this course is to provide for the application of the knowledge of accounting principles and practice gained in the preceding courses to the analysis and solution of complex problems involving a recognition of the economic, legal, and social aspects of various forms of business organization. The course content consists chiefly of problems given in C.P.A. examinations.

All phases of partnership, corporation, bond, depletion, cost accounting, consolidation, municipal accounting, bank accounting, adjustments of complex statements and reports, actuarial problems, and institutional accounting will be covered.

Pre-requisite: AC 8

3 semester hour credits

AC 10 Income Tax and Public Accounting

The first part of this course covers the fundamental aspects of Federal Income Tax Law and the accounting concepts which arise from its interpretation. The latter part of the course contemplates the application of accounting knowledge to the analysis and interpretation of accounting records. Case material is used to outline the type of procedure best adapted to an intelligent examination of accounting records, and the compilation of reports on which the business manager can base plans for future operations. Specifically, balance sheet audits, detailed audits, and special investigations for credit and other purposes receive attention.

Pre-requisite: AC 8

3 semester hour credits

Banking and Finance

FI 3 Business Finance

The fundamental principles of finance are approached in this course from the point of view of the business man. A study is made of the two basic ways of financing, namely, equity and borrowed funds, and their use in original and expansion financing. In addition, consideration is given to working capital requirements and the distinctions between short-term and long-term financing.

2 semester hour credits

FI 4 Finance Problems

A continuation of FI 3 Business Finance. This course deals with the application of the principles of finance to such problems as surplus, dividend and reserve policies, the relation of the corporation to banks and the investing public, and the problems of both trade and economic risk. The course includes an analysis of such combinations as trusts, holding companies, consolidations, and pools from both the public and financial points of view. Analysis is also made of aspects of reorganization problems in the light of present legislation. The course concludes with an analysis of government and state agencies now supplementing private sources of business funds.

2 semester hour credits

FI 6 Banking and Business

Because the student taking this course has already received through his study of economics some instruction in the general principles of money and credit, particular attention is given to the bank in its relation to the business man, and the function of the Federal Reserve System as a central banking agency. An analysis is made of the more basic aspects of Federal Reserve policy as they affect business and the banking community. Current problems are carefully considered.

Pre-requisite: Ec 3

2 semester hour credits

FI 8 Advanced Banking Problems

In this course students are taught to look at the problems confronting the banker from the executive's point of view. Through a series of problems, most of which are actual cases, the matter of loan and investment policies will be studied at length with other problems concerning methods of increasing the bank's efficiency, volume of business, and profits receiving the proper amount of attention.

3 semester hour credits

FI 9 Investments

This course consists of a review of the principles of investment, a study of investment policies, and the mechanics and mathematics of investments. It includes a basic study of the advantages and disadvantages of stocks and bonds as media of investment from a present and historical basis.

3 semester hour credits

FI 10 Investments

A practical study is made of the various fields of investment such as industrials, rails, banks, real estate, government, and foreign investments. Emphasis is placed on security analysis as it pertains to the individual issues. The course not only concerns itself with an intensive study of particular companies and issues, but also includes an analysis of the various current methods of market analysis.

3 semester hour credits

FI 12 Public Finance

One of the biggest problems confronting the people of all nations today is the question of taxation. In recognition of this fact and of the enormous difficulties facing business organizations and individuals because of the tax burden, the course in Public Finance is offered. This course teaches the kinds of taxes imposed by municipal, state, and federal governing bodies. Attention is given to the "trend" in taxation. Governmental borrowings and revenues are studied as to their general effect on the finances of

individuals and business concerns. A large part of the time allowed for this course is spent in a study of the sources of revenue such as commodity taxes, highway taxes, general property taxes, taxes on business, poll taxes, income taxes, and death taxes.

2 semester hour credits

FI 13 Real Estate Practice and Appraising

Consideration of land as an economic institution, and the importance of a sound land policy; the real estate man as a broker in landed property, his merchandising operations; the problems of owners and builders, the service to be rendered the ordinary purchaser; organization of the real estate office, renting, leasing, and property management; the importance of acquaintance with valuation principles; building operations, the financing of transactions, subdividing and planning; taxation, legal considerations, professional relationships.

3 semester hour credits

FI 14 Insurance Principles and Practices

The purpose of the course is to provide a comprehensive knowledge of insurance principles and coverage such as will provide a broad foundation for the student who plans to enter the business of insurance or enable the business man to plan a satisfactory program for personal needs or business responsibilities. Content: the basic principles of insurance, solving the economic problem of risk, types of insurance contracts, legal interpretation of the insurance contract, types of insurance companies, the needs of the buyer of insurance, co-operative organizations in the field of insurance.

3 semester hour credits

Marketing and Advertising

MA 1 Marketing Principles

This course is designed to acquaint the student with the principles underlying the distribution of merchandise. Textbook assignments and lectures introduce a knowledge of the place of marketing in our modern economic order; the basic structure of markets; the main functions of marketing such as assembling, grading, storing, buying, selling and financing of goods; and the general classification of commodities into major types for the purpose of analytical study. The course gives further and more detailed consideration to the activities of the several types of middlemen such as brokers, wholesalers, and retailers, and their utilization as channels of distribution; the work of the commodity exchanges and co-operative marketing associations; and the development of chain stores, mail order houses, and department stores.

Other topics considered are market risk, pricing, selling terms and discounts, hedging, advertising, and the legal aspects of price maintenance. Supplementary lectures and illustrative material will be given to explain in some detail the methods used in marketing several specific commodities.

3 semester hour credits

MA 2 *Marketing Problems*

Using actual case material this course analyzes and suggests solutions to a wide variety of selling problems in typical industries and trades. It is aimed throughout to develop the analytical powers of the student so that he may decide a problem from the viewpoint of a marketing executive. Consideration is given to consumers' buying habits and buying motives, to the important types of retail and wholesale enterprise, and to an analysis of the channels of distribution with the object of formulating a basis for selecting suitable channels for various products. The marketing of industrial goods is studied including certain special problems such as hedging. Producer's co-operative marketing is also given attention.

3 semester hour credits

MA 3 *Sales Management*

The study of actual case material forms the basis of this course. In each case the facts are analyzed and a solution proposed. The major problems of sales management may be stated as questions: What to sell? To whom shall products be sold? At what price and terms shall products be sold? The answering of these questions involves a consideration of merchandising policies and organization, market channels, market research and analysis, and pricing and credit policies.

3 semester hour credits

MA 4 *Sales Management*

Continuing MA 3 Sales Management this course deals primarily with the following problems: sales methods, sales promotion, sales campaigns, management of sales force, and the planning and control of sales operations.

In the field of sales management the solution of problems involves two types of mental effort. First, there is the suggestion of plans or alternatives, a task requiring imagination; second, there is the choice between the alternatives so suggested, a matter of judgment. It is essential that the student of business management acquire the habit of weighing alternatives before deciding, but much more is to be gained if the student possesses and develops imagination.

The purpose of the courses in sales management is principally to develop an approach and technique for the solution of problems, so the student will be able to analyze and think through the problems which must be faced later when he arrives at a post of responsibility.

3 semester hour credits

MA 5 Advertising Principles

The purpose of this course is to acquaint the student with the fundamental principles and facts which the advertising man must know today. The economic background of the subject and its development is presented, together with a survey of the methods for planning and preparing advertisements actually followed in advertising offices. Consideration is given to human instincts, buying habits, argumentative and suggestive appeals, color, headlines, layout, illustrations, and trademarks.

3 semester hour credits

MA 6 Advertising Problems

The analysis and solution of a wide variety of advertising problems and cases based upon the actual business experience of a large number of firms constitutes the content of this course.

3 semester hour credits

MA 7 Retail Store Management

The purpose of this course is to study the principles of successful retailing and to solve actual problems involving these principles. Layout, location and equipment of retail stores are first considered. Store organization, market contacts, buying, receiving and marking merchandise, and invoice procedure are taken up next. Mark-up and mark-down are dealt with in detail through practical examples requiring solution by the students, as are inventory and stock control methods. Merchandise planning is discussed and illustrated.

3 semester hour credits

MA 8 Retail Merchandising

This course continues the work of Retail Store Management, dealing with expense distribution, retail credits and collections, and with special phases of retail accounting. Other topics considered are: fashion, salesmanship, customer service, and the training and welfare of employees. The promotion of sales events and retail advertising practices are analyzed from the viewpoint of the store executive.

3 semester hour credits

Industrial Administration

IA 1 Industrial Management I

The course in industrial management places emphasis on the administrative and profit-making phases of factory and plant operation. A textbook is used to present elementary principles and problem material which are supplemented by lectures.

The first part of the course presents a brief historical background of U. S. industry; this is followed by a treatment of the location of the plant; plant services and material handling; plant design, structure, and layout; standardization, simplification, and specialization.

2 semester hour credits

IA 2 Industrial Management II

This course is a continuation of Industrial Management IA 1. It deals with the control of plant operations. Each department of a modern industrial concern is considered, emphasis being placed on the organization and management problems confronted and how they may be handled, with the intention that the student shall become familiar with the activities and general working of each department and the relationship which the departments hold to one another and to the business as a whole. In detail are considered: budgeting, standards of performance (time and motion study, wage systems), organization, routing, scheduling, dispatching, inventory control, quality control, and visual controls such as the organization chart, planning board, and departmental report.

2 semester hour credits

IA 3 Personnel Administration

A consideration of what modern industry is doing in making an application of science to the obtaining and retaining of an effective and co-operative working force. The student studies thoroughly personnel administration systems now in use including the preparation and use of many forms among which are the occupational description, application, and interview blanks, promotion charts, wage scale, personnel control charts, etc. In addition, such subjects as wage payment plans, profit sharing, the training of workmen, workers' security plans, employee representation, collective bargaining, and management relationships are given attention.

Provisions of the National Labor Relations Act and the Wages and Hours Act are discussed.

3 semester hour credits

IA 4 Personnel Problems

This course brings to the attention of the student an understanding of the related, yet varied, problems with which the modern personnel department is confronted. These include problems of guidance, placement, job evaluation, adjustment of rates, employee rating systems, development of complete, yet simple, personnel records, etc.

3 semester hour credits

IA 6 Motion and Time Study

This course comprises a detailed study of time and motion study work, a complete study and actual practice in micromotion which is the use of motion pictures in the motion study work, a preparation of simo-charts (the use of colored charts and symbols called Therbligs which show all the elements in an operation cycle), and the making of process charts which is the use of specifically designed symbols, or industrial shorthand, to record motion analysis.

3 semester hour credits

IA 14 Production Processes

A course in the techniques, processes, and machines used in the production of manufactured articles.

The subject matter is presented in lectures supplemented by slides, exhibits, and demonstrations. The processes covered are heat-treating, forging, welding, foundry practice, and die casting. The metallurgical principles involved are correlated with good shop practice in each case.

The construction nomenclature, and operation of the following machine tools are discussed: lathe, milling machine, planer, shaper, broaching machine, and grinder.

3 semester hour credits

Public Administration

PA 2 Public Administration I

A study of career service of the local, state, and national government; the administrative positions in career service; the information needed by the government administrator in order to function effectively; and the means for acquiring public administration knowledge.

3 semester hour credits

PA 4 Political Concepts

A critical study is made of the major developments in political theory since Bentham with special reference to the influence of these developments upon American politics and political institutions. Attention is paid to the modern conflict between the democratic and the totalitarian conceptions of the state.

3 semester hour credits

PA 5 Business and Government

The object of this course is to develop a thorough understanding of the relationships between government and business. The attitude of our government toward business since 1885 as evidenced by legislative, judicial, and executive action will be analyzed in detail. Careful attention will be given the experience under the NRA and the attempts on the part of government and business to preserve the good features of the codes. Special consideration will be given to the part played by the administrative agency.

2½ semester hour credits

PA 7 Public Administration II

A study of the subject matter and principles of management necessary for the efficient operation of the government.

3 semester hour credits

PA 8 Public Administration III

This course presents a study of the public relations, fiscal control, and policy making aspects of public administration, stressing the importance of co-operation among government bureaus, legislative bodies, and the public; and presents to the student an appreciation of the importance of versatility of ability for a successful public career.

3 semester hour credits

Journalism

E 9 Journalism I

The newspaper technique, with practice in rewriting; the general tasks of an "inside" man and the functions of the editorial department.

3 semester hour credits

E 10 Journalism I

The problems of reporting and newswriting, with written assignments in all types of spot news reporting.

Preparation: E 9

3 semester hour credits

E 11 Journalism II

Editing the news. The writing of editorials, feature articles, and columns.

Preparation: E 10

3 semester hour credits

E 12 Journalism II

A general practice course in newspaper writing, the covering of special assignments, and editorial problems.

Preparation: E 11

3 semester hour credits

Business Law

L 1 Legal Bases of Business

A course presenting the fundamental principles of business law and their relationships to the operations of business enterprise. Since practically every phase of business activity from the organization to the dissolution of a concern rests on a foundation of law, it is essential that the student of business understand the rudimentary legal principles involved. Major topics covered include contracts, agency, negotiable instruments, sales, bailments, carriers, insurance law, suretyship, and bankruptcy.

2 semester hour credits

L 2 Legal Bases of Business

This course deals with the legal and economic phases of business organizations. It discusses the individual proprietorship, partnership, corporation, and business trust, showing how each is formed, operated, and dissolved. The merits, as well as the shortcomings, of each form are treated. Specific problems will deal with the legal requirements, organization expense, operating problems, taxes, and reports required of each of these types of organizations.

2 semester hour credits

Co-ordination

C 11 Business Conference

This course is designed to bring about analytical thinking and systematic planning of the "after-graduation-employment" problem. It is conducted as an open discussion class by the Department of Co-operative Work. Each co-ordinator has in class those students who have been placed and supervised on co-operative work by him. Each student analyzes and applies to himself as

the "product" the fundamental principles of merchandising. Prominent men who are leaders in the fields of employment counseling, business, or engineering present the employers' viewpoint. Thus the graduating seniors are brought face to face during the year with one of the most important and perplexing problems of life, namely, how to "sell their services", thereby aiming to bring a co-ordinated training of theory and practice to a logical conclusion.

½ semester hour credit

C 12 *Business Conference*

This course is the sequel to C 11 and consists of the practical application of the techniques of job-getting which have been analyzed and discussed in that course. It is conducted on a conference rather than on a class basis, the major portion of the time being devoted to the planning and writing of letters to and securing interviews with prospective employers. It is intended that this course will culminate in the attainment by each student of his after-graduation job.

½ semester hour credit

English

E 1-B English

A course in composition with emphasis on the basic principles of writing. A brief, comprehensive review of grammar and rhetoric precedes the study of exposition. Works of contemporary essayists and biographers are used as models for weekly themes and studied as examples of modern literature.

3 semester hour credits

E 2-B English

A continuation of E 1-B, with a study of contemporary short stories, plays, and poems. Toward the end of the term a careful study of letter writing is made.

3 semester hour credits

E 3-B Business Communication

A survey of the basic techniques and forms of expression and communication in business. The principles and methods of oral communication are studied, with emphasis on the oral report, the discussion, the conference, and types of the informal speech. The purpose, form, and execution of graphic communication are

studied, through the most common and useful types of business chart, graph, and tabulation. By the use of cases, problems, and class exercises, the student is given practice in the forms of business communication.

2 semester hour credits

E 4-B Business Communication

A continuation of the survey of communication methods and forms. Written communication is studied by way of the business letter, memoranda, manuals, handbooks, instruction sheets, and other forms of business writing. The student is taught the principles of expression and written composition, with emphasis on organization, emphasis, and lay-out of the material to be communicated. Practice is provided through written problems and classroom cases.

2 semester hour credits

E 5-B Advanced Report Writing

An advanced study of current practices in industrial report writing will be the purpose of this course. The emphasis will be placed equally upon matter and form so that professional proficiencies may be correlated with effective presentation.

2 semester hour credits

E 13 Effective Speaking

This course offers practical training in the preparation and presentation of the various types of speeches. The instruction is planned to eliminate defects of voice, posture, and delivery, and to develop in the student an ability to speak easily, naturally, and forcefully.

1 semester hour credit

E 14 Effective Speaking

Continued practice in impromptu and extempore speaking, organization of material, consideration of the audience, and vocabulary building form the basis of the course.

1 semester hour credit

Economics

Ec 1 Economic Geography

In order to provide an adequate background for the study of economics this first course emphasizes the economic resources of our country and the part played by these resources in the develop-

ment of our modern industrial society. The course is more concerned with promoting the comprehension of basic concepts than with stressing encyclopedic knowledge of masses of details. In the latter part of the semester frequent use is made of motion pictures to illustrate the processes and peculiar economic characteristics of specific industries.

3 semester hour credits

Ec 2 Commercial and Industrial History of the U. S.

This course is designed to complete the factual background which is needed for the most successful study of theoretical economics. The economic development of the United States is traced from the colonial period to the present with special emphasis upon the period since the Civil War. Stress is laid upon the importance of economic factors and changes in our history in the description of the development of manufacturing, agriculture, domestic and foreign commerce, finance and banking, transportation and labor organizations. Consideration is given to European developments which have been closely related to those of the United States.

4 semester hour credits

Ec 3 Economic Principles

A thorough grounding in the fundamental principles and laws of economics is the aim of this basic course. The main topics include: the nature and organization of production, the nature and importance of wants, the relation of money and prices, the process of exchange, and the nature of international trade.

2 semester hour credits

Ec 4 Economic Principles

A continuation of Ec 3. A careful analysis is made of the determination of price under conditions of competition and monopoly, and of the distribution of wealth and income in the form of wages, economic rent, interest, and profits. The elements of insurance are discussed in connection with profits.

Preparation: Ec 3

2 semester hour credits

Ec 5 Economic Problems

In this course the application of economic principles to some of the major economic problems of modern society is emphasized. The problems studied include consumption, protective tariffs and subsidies, labor problems such as unemployment and labor unions, and the business cycle.

Preparation: Ec 3

2 semester hour credits

Ec 6 Economic Problems

A continuation of Ec 5 Economic Problems. Among the problems considered are the following: price stabilization, the agricultural problem, the relation of government to business including the control of monopolies and public utilities, insurance, public finance, and proposals for the remodeling and improving of the economic system.

Preparation: Ec 5

2 semester hour credits

Ec 8 Business Cycles

After a study of the conditions which underlie cyclical fluctuations in prices, volume of trade, physical production, and employment, a careful analysis is made of the more significant theories of the business cycle. The possibilities of controlling such fluctuations and of initiating recovery receive extended attention. Throughout the course emphasis is placed upon the current phase of the business cycle and its peculiar problems.

Preparation: Ec 5, Ec 6

2 semester hour credits

Ec 9 Statistics in Business

This course is intended to give the student an understanding of statistical principles and methods and their practical application in the administration of modern business. A study is made of the nature, sources, collection and organization of business facts; the presentation of such facts in tabular or graphic form, the various averages, measures of dispersion, and the construction and use of index numbers. Laboratory periods provide an opportunity for each student to demonstrate his ability to apply the principles studied.

2 semester hour credits

Ec 10 Statistics in Business

The major portion of this continuation of Ec 9 Statistics in Business concerns the analysis of time series and includes the methods of obtaining trends, seasonal indexes, and the measurement of cyclical variation. Correlation of time series is related to the problems of business forecasting. In the laboratory work each student is required to make a complete analysis of an individual time series, preferably associated with his co-operative work.

2 semester hour credits

Ec 11 Labor Problems

An intensive study of the labor problems of modern industry constitutes the content of this course. Unemployment and other grievances of the worker, including industrial accident and disease,

inadequate wages, long hours, undesirable working conditions, child and woman labor, etc., are carefully analyzed. Labor unions, representing the workers' effort to solve the above problems, receive extended attention with an appraisal of their policies and accomplishments. Employee representation, profit-sharing plans and similar devices of the employer to meet the same problems are also examined critically. The attitude of our government toward these problems and its attempts to handle them are analyzed carefully. The suggestions of other groups and agencies in respect to these problems will be treated, e.g., co-operative movement, socialism.

Pre-requisite: Ec 3 and Ec 4

3 semester hour credits

Ec 12 Economic Systems

This is an intensive analysis of alternative economic systems. Various criteria for evaluating the different systems are developed.

Pre-requisite: Ec 3, Ec 4

2 semester hour credits

Ec 14 International Economic Relations

A careful examination of the important principles of international trade and finance precedes a critical survey of the international commercial policies of modern nations, with special reference to the United States. Such broader problems as the international control of raw materials, exchange restrictions, international cartels and the economic activities of the League of Nations and other international organizations are considered.

Preparation: Ec 5, Ec 6

3 semester hour credits

Ec 15 History of Economic Thought

A critical review of the origin and development of economic thought from the ancient world to modern times is the aim of this course, since familiarity with the efforts of great economic thinkers in the past is essential for the thorough understanding of modern economic theory. After briefly noting the contributions of Plato and Aristotle, the early Christian fathers, and the writers of the Middle Ages, each of the main schools of economic thought is taken up in turn: the Mercantilists, the Physiocrats, the Classical School, the Socialists, the Historical School, the Austrian School, and Alfred Marshall.

Preparation: Ec 5, Ec 6

2 semester hour credits

Ec 16 Advanced Economic Theory

The course introduces the student to the more complex aspects of economic theory. Particular consideration is given to the major modern theoretical problems.

Preparation: Ec 15

2 semester hour credits

Government

Gv 1 American Government

The study of our National Government with respect to its organization and function; its powers and limitations under the Constitution; its legislative, administrative and judicial machinery under the party system of government and bureaucracy.

3 semester hour credits

Gv 2 American Government

A more careful study of the relationships of our federal, state, and municipal governments, including an analysis and comparison of the various state governments and types of municipal government with respect to state and local agencies for carrying out the executive, legislative and judicial functions of government in a democratic country.

3 semester hour credits

Gv 3 Comparative Government

The older governments of Europe, those principally of Great Britain and France, but also of Switzerland and the Scandinavian countries, are described and analyzed in this course. Institutions are compared in these various states with reference to America and the newer governments of Europe.

2 semester hour credits

Gv 4 Comparative Government

A study of the newer governments of Europe, as found in Germany, Italy, and the Soviet Union. Democracy and dictatorship are analyzed as different modes of life and rule. These states are compared to each other, to the older governments of Europe, and to the United States.

2 semester hour credits

Gv 5-B Constitutional Law

A careful study of the leading constitutional principles of the American government as developed through judicial interpretation. Primary emphasis is placed upon the relation of constitutional law to present day problems with particular reference to such items as "due process of law" and "interstate commerce".

3 semester hour credits

Gv 7 Origins of Political Theory

A survey of political philosophy from Plato and Aristotle to Bentham. The nature, origin, forms, and ends of the state and government are covered.

2 semester hour credits

Gv 8 Modern Political Theory

A critical study is made of the major developments in political theory since Bentham with special reference to the influence of these developments upon American politics and political institutions. Attention is paid to the modern conflict between the democratic and the totalitarian conceptions of the state.

2 semester hour credits

History

H 1 History of Civilization

This is primarily a background course. Introductory lectures deal with primitive society, the development of language and writing, and the early contributions of Egypt and Asia. More detail is given to the structure of Greek and Roman Society, the rise of the Christian Church, the barbarian invasions of the Empire, the growth of Islam, and the life of the early Middle Ages.

4 semester hour credits

H 2 History of Civilization

This course deals with the growth of the monarchies in Europe, the medieval Church, the art and literature of the Renaissance and Reformation, the economic revolution, the Age of Reason in France and England, the Old Regime and the Revolution in France, and the growth of science and industrialism.

4 semester hour credits

H 9 The United States to 1865

This course is an interpretation of the events which shaped the American nation to the Civil War. Social customs, economic influences, racial contributions, and humanitarian movements are not neglected even though the political history is stressed.

2 semester hour credits

H 10 The United States Since 1865

Major attention is given to the social, economic, and political foundations of recent history in this survey of the transition of America from an agricultural to an urban industrialized society since the Civil War. Consideration is given to the problems arising with the emergence of America as a world power.

2 semester hour credits

Psychology

Ps 1-B Psychology

An elementary survey of the psychology of individual differences including personality differences, together with a presentation of some of the practical applications of the findings of differential psychology.

2 semester hour credits

Ps 2-B Psychology

An introduction to general experimental psychology. The topics considered include learning, thought, memory, perception, and sensation.

2 semester hour credits

Physics

P 31 Introduction to Physics

A complete course in mechanics, heat, and sound, following the subject matter found in a standard textbook of college physics. Motion pictures and many demonstrations are shown during the lectures. Numerical problems furnish excellent practice in the use of algebra.

Must be taken concurrently: M 31

4 semester hour credits

P 32 Introduction to Physics

A continuation of P 31 dealing mainly with the study of light and electricity. Selected numerical problems give good practice in the use of trigonometry. P 31 together with P 32 have been carefully planned to fulfill the physics requirements of the Navy V-1 program.

Must be taken concurrently: M 32

4 semester hour credits

Mathematics

M 31 Mathematics I

A course in freshman algebra for non-science majors who intend to enter the armed services. All the topics usually included in freshman algebra are covered.

3 semester hour credits

M 32 Mathematics II

A freshman trigonometry course which includes the simple elements of analytic geometry and graphs for non-science majors. This course, together with M 31, will enable the non-science student to prepare himself in mathematics for greater value in the armed services.

3 semester hour credits

Spanish

Sp 1 Elementary Spanish

A beginner's course stressing the essentials of grammar, practice in pronunciation, and progressive acquisition of basic vocabulary and current idiomatic expressions.

3 semester hour credits

Sp 2 Elementary Spanish

A continuation of Sp 1. Most of the time is devoted to the reading of simple texts, with oral practice based on the material read.

Preparation: Sp 1

3 semester hour credits

Sp 3 Intermediate Spanish

In this course several texts of average difficulty are read and studied. The work includes a thorough review of grammar, oral practice, based on the reading matter, memorizing of selected passages, dictation, study of idioms, vocabulary building, and outside reading.

Preparation: Sp 2

3 semester hour credits

Sp 4 Intermediate Spanish

A continuation of Sp 3, with an increasing amount of both class and outside reading.

Preparation: Sp 3

3 semester hour credits

Sociology

S 1 Introduction to Sociology

In presenting a survey of the origins and sources of human society, this study provides orientation for the course in principles and problems which follows. The several theories of organic evolution are discussed. The antiquity of man and basic anthropological data are considered. The racial and ethnic groupings of man are then studied in the light of biological, geographical, and cultural factors.

2 semester hour credits

S 2 Principles of Sociology

Facts and principles basic to a general knowledge of the field of sociology are presented. The origins, forms, and forces of human associations are discussed. A study is made of the principal sociopolitical groups such as socialism, communism, fascism, and democracy. The course is practical in emphasis and is designed to meet the needs of the student who desires a survey of the subject.

2 semester hour credits

S 3 Social Problems

Attention is given the nature, complex causation, and inter-relatedness of social problems in general. Cultural change with its attendant lags, as well as other social forces and conflicts, are studied. While sociological theory is occasionally introduced to clarify the problem at hand, the course is essentially practical in character. Such problems as poverty and unemployment, race antagonisms, population pressures, and the broken home are considered. Optional field trips to various institutions give concreteness to the problems studied.

Preparation: S 1, S 2

2 semester hour credits

S 4 Social Pathology

Similar to the course in Social Problems in background and approach, this study deals with the maladjustments and ills of human society. Emphasis is given those pathological conditions which exist in relations between the individual and the group.

Typical subjects presented include mental defectiveness and disease, alcoholism and drug addiction, suicide, delinquency and crime, and pathologies of domestic relations. The field trips arranged for this course add to the practical knowledge of the social ills which are studied.

Preparation: S 1, S 2

2 semester hour credits

Other Courses

PE 1 Hygiene

One class hour a week is devoted to the study of information closely related to the physical training work and to personal and mental hygiene. For each class lecture the student is assigned at least one hour of outside study based on the required textbook. The course includes enough of the fundamentals of physiology and anatomy to enable the student to understand such parts of the course as require some knowledge of these subjects.

1 semester hour credit

U 4 Business Policy

This course is set up as a seminar in which the members of the class will examine the problems that the business man faces daily in his relations with government, labor, the market, and the community. The ethical features of business policy formation will be stressed along with the social implications. An attempt will be made to determine the criteria by which fair business practices can be distinguished from unfair.

2½ semester hour credits

Orientation

This course, required of all first year students, is designed to make the entering student explicitly aware of those facts, principles, and techniques which are significantly related to the maintenance of his intellectual efficiency, to assist him in making desirable social adjustments in the college community, to help him make a wise choice in his upperclass field of specialization. Special effort is made to prepare the student to make an early and satisfactory adjustment to the conditions of the co-operative work. Lectures and individual conferences.

No credit

Physical Training

All first-year students are required to take physical training. Health, strength, and vitality do not come by chance, but by constant attention to those factors involved in their development. It is very essential for the student to acquire good habits of life.

The work in the course includes a formal calisthenic program, special exercise classes for the correction of postural defects, participation in the regular athletic program, including baseball, basketball, hockey, track, and many types of informal games. All members of the class are also required to learn to swim.

Students wishing to be excused from physical training, because of physical defects, are required to present a petition to the faculty supported by a physician's certificate.

No credit

Business Administration Theses

A thesis in the College of Business Administration is considered to be an essay involving the statement, analysis, and solution of some problem in a special field of business administration. Its purpose is to demonstrate a satisfactory degree of initiative and power of original thought and work on the part of the candidate. A mere resume of existing knowledge in some subject is not acceptable. This, it is true, must usually be made, but in addition thereto the student must show his ability to deal constructively with the data he has collected and his power to draw significant and reliable conclusions from his investigations. The completed thesis will be examined for acceptance or rejection from the technical viewpoint by the departments interested and then forwarded to the Secretary of the Faculty. Final approval of the thesis rests with the Dean. When it is accepted, the thesis becomes the property of the school and it is not to be printed, published, nor in any other way made public except in such manner as the department and the Dean shall jointly approve.

Theses are not required of seniors in the College of Business Administration. To certain students who wish to do so, however, the privilege of writing a thesis may be granted by the Dean in accordance with the following regulations:

1. To be eligible to write a thesis a student must have attained a scholastic average of at least 2.0 or better during his middler year and the first half of his junior year.
2. Students who have met this minimum requirement may petition the Dean for the privilege of substituting a thesis for any one of the required courses of the fifth year.
3. In his petition the student must state the subject which he proposes to investigate and give a brief statement of the purpose and scope of the proposed thesis.
4. Petitions for the privilege of writing theses must be submitted in writing to the Dean not later than the middle of the second college period of the junior year.

NORTHEASTERN UNIVERSITY

Courses of Instruction Offered in the Day Colleges

Certain of the courses here listed are offered only in alternate years, and the University reserves the right to withdraw any course in which there is insufficient enrollment.

Courses not included in the prescribed curricula may be taken only after approval by the student's faculty adviser. Except where otherwise indicated, electives are not open to freshmen.

Pre-requisite courses are divided into two groups. Those courses printed in type (AC2) must have been completed with passing grades before a student will be permitted to register for the advanced courses to which they apply. Those courses printed in (B3) are of such a preparatory nature that a student undertaking an advanced course without having had the preparatory courses specified, will ordinarily find himself greatly handicapped, and he may not register in the advanced course without the consent of the instructor.

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College*	Curriculum	Yr.
<i>Accounting</i>								
AC1	Accounting I		4	4	0	BA	All	1
AC2	Accounting II		4	4	0	BA	All	1
AC5	Cost Accounting	AC2	4	4	2	BA	All	2
AC6	Cost Accounting	AC2	4	4	2	BA	All	2
AC7	Accounting Problems	AC4	3	4	0	BA	All	3
AC8	Accounting Problems	AC4	3	4	0	BA	All	3
AC9	C. P. A. Problems	AC4	3	5	0	BA	Elective	
AC10	Income Tax and Public Accounting	AC4	3	5	0	BA	Elective	
<i>Biology</i>								
B1	General Zoology		3	2	2	LA	Biology	1
B2	General Botany		3	2	2	LA	Biology	1
B3	Invertebrate Zoology	B1	2	2	4	LA	Biology	2, 3
B4	Invertebrate Zoology	B3	2	2	4	LA	Biology	2, 3
B5	Vertebrate Zoology	B1	2	2	4	LA	Biology	3
B6	Vertebrate Zoology	B5	2	2	4	LA	Biology	3
B7	Animal Physiology	B6	2	3	0	LA	Biology	
B8	Animal Physiology	B7	2	3	0	LA	Biology	
B9	Principles of Genetics	B1,2	2	3	0	LA	Biology	
B10	Principles of Genetics	B9	2	3	0	LA	Biology	
B11	Animal Histology	B6	2	2	2	LA	Biology	
B12	Animal Histology	B11	2	2	2	LA	Biology	
B13	Vertebrate Embryology	B6	2	2	2	LA	Biology	
B14	Vertebrate Embryology	B13	2	2	2	LA	Biology	
B15	General Parasitology	B3,4	2	2	2	LA	Biology	
B16	General Parasitology	B15	2	2	2	LA	Biology	
B17	Mammalian Anatomy	B6	2	1	6	LA	Biology	
B18	Mammalian Anatomy	B17	2	1	6	LA	Biology	
B19	Histological Technique	B12	2	1	6	LA	Biology	
B20	Histological Technique	B19	2	1	6	LA	Biology	

*NOTE: BA = College of Business Administration.
LA = College of Liberal Arts.
Eng = College of Engineering.

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
Biology — Continued								
B21	History of Biology		2	3	0	LA	Biology	
B22	History of Biology		2	3	0	LA	Biology	
B25	General Entomology	B1	3	3	4	LA	Biology	
B26	Economic Entomology	B1,B25	3	3	4	LA	Biology	
B61	Seminar		2	3	0	LA	Biology	
B62	Seminar	B61	2	3	0	LA	Biology	
B65	Thesis		3			LA	Biology	
B66	Thesis		3			LA	Biology	

Co-ordination

C1	Vocational Conference		1½	2	0	LA	All	5
C2	Vocational Conference		1½	2	0	LA	All	5
C7	Engineering Conference		1½	2	0	Eng	All	5
C8	Engineering Conference		1½	2	0	Eng	All	5
C11	Business Conference		1½	2	0	BA	All	5
C12	Business Conference		1½	2	0	BA	All	5

Chemistry

Ch1	General Chemistry		4	3	3	Eng,LA	{All,Eng LA Pure & Applied Science	1 1 1
Ch2	General Chemistry	Ch1	4	3	3	Eng,LA	{All,Eng LA Pure & Applied Science	1 1 1
Ch9	Qualitative Analysis	Ch1,2	3	4	0	Eng,LA	{IV(E), LA Chem	2
Ch11	Qualitative Anal. Lab.	Ch1,2,9	2½	0	10	Eng,LA	{IV(E), LA Chem	2
Ch12	Quantitative Analysis	Ch1,2,9,14	2	3	0	Eng,LA	{IV(E), LA Chem	2
Ch13	Quantitative Analysis	Ch1,2,12,15 or 17	2	3	0	Eng,LA	{IV(E), LA Chem	3
Ch14	Quantitative Anal. Lab.	Ch1,2,11,12	1½	0	7	Eng,LA	{IV(E), LA Chem	2
Ch15	Quantitative Anal. Lab.	Ch14,13	2	0	9	LA	Chem	3
Ch17	Quantitative Anal. Lab.	Ch1,2,13,14	1	0	5	Eng	IV	3
Ch25	Organic Chemistry	Ch1,2,27	3	4	0	LA	Chem	
Ch26	Organic Chemistry	Ch1,2,25,28	3	4	0	LA	Chem	
Ch27	Organic Chemistry Lab.	Ch1,2,25	1	0	5	LA	Chem	
Ch28	Organic Chemistry Lab.	Ch1,2,26,27	1	0	5	LA	Chem	
Ch31	Organic Chemistry	Ch1,2,33,40	2	3	0	Eng,LA	{IV(E), LA Chem	4
Ch32	Organic Chemistry	Ch31,34	2	3	0	Eng,LA	{IV(E), LA Chem	4
Ch33	Organic Chemistry Lab.	Ch1,2,31,40	1	0	5	Eng,LA	{IV(E), LA Chem	4
Ch34	Organic Chemistry Lab.	Ch32,33	1	0	5	Eng,LA	{IV(E), LA Chem	4
Ch35	Organic Chemistry	Ch32,37 or 39	2	3	0	Eng,LA	{IV(E), LA Chem	5
Ch37	Organic Chemistry Lab.	Ch34,35	2	0	9	LA	Chem	5
Ch39	Organic Chemistry Lab.	Ch34,35	1	0	5	Eng	IV	5
Ch40	Physical Chemistry	{Ch12,14,13, 15 or 17	2½	3	2	Eng,LA	{IV(E), LA Chem	3

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
Chemistry — Continued								
Ch41	Physical Chemistry	Ch13,15,40	3½	4	4	LA	Chem	4
Ch42	Physical Chemistry	Ch41	3½	4	4	LA	Chem	4
Ch45	Physical Chemistry	Ch13,17,40	3	4	2	Eng	IV	4
Ch46	Physical Chemistry	Ch45	3	4	2	Eng	IV	4
Ch48	Colloidal Chemistry	Ch41	2½	3	2	LA	Chem	
Ch51	Sources of Information	Ch1,2	1	1	0	Eng,LA	{IV(E) LA Chem	2 2
Ch52	History of Chemistry	Ch1,2	2	3	0	LA	Elective	
Ch63	Advanced Chemistry	Ch42	2	3	0	LA	Chem	
Ch64	Advanced Chemistry	Ch35	3	3	4	LA	Chem	
Ch65	Thesis	Ch42	3	0	9	LA	Chem	
Ch66	Thesis	Ch42	4	0	12	LA	Chem	
Ch101	Adv. Physical Chemistry		3			LA	Graduate	
Ch102	Adv. Physical Chemistry		3			LA	Graduate	
Ch103	Adv. Organic Chemistry		3			LA	Graduate	
Ch104	Adv. Organic Chemistry		3			LA	Graduate	
Ch105	Graduate Thesis		2-4			LA	Graduate	
Ch106	Graduate Thesis		2-4			LA	Graduate	
Ch107	Graduate Thesis		2-4			LA	Graduate	
Ch108	Graduate Thesis		2-4			LA	Graduate	

Chemical Engineering

ChE1	Flow of Fluids	P1	2	3	0	Eng	IV	3
ChE2	Industrial Stoichiometry	Ch12,13	2	3	0	Eng	IV	3
ChE3	Unit Operations	ChE1,5	3	4	0	Eng	IV	4
ChE4	Unit Operations	ChE2,3,6	3	4	0	Eng	IV	4
ChE5	Unit Operations Lab.	ChE3	1½	0	4	Eng	IV	4
ChE6	Unit Operations Lab.	ChE4	1½	0	4	Eng	IV	4
ChE7	Inorganic Chem. Tech.	Ch9,ChE2	2	3	0	Eng	IV	5
ChE8	Organic Chem. Tech.	Ch32,ChE4	2	3	0	Eng	IV	5
ChE9	Chem. Process Lab.	ChE4	3	1	6	Eng	IV	5
ChE10	Chem. Eng. Projects	ChE4	4	1	6	Eng	IV	5
ChE11	Chem. Eng. Thermodynamics							
ChE12	Engineering Materials	Ch46	2	3	0	Eng	IV	5

Civil Engineering

CI3	Surveying I	M3	1½	3	0	Eng	I	2
CI4	Surveying II	CI3	2½	4	0	Eng	I	2
CI5	Surveying I, F & P	D1,CI3	1	0	5	Eng	I	2
CI6	Surveying II, F & P	CI4,5	1	0	5	Eng	I	2
CI7	Surveying III	CI3,4	2	3	0	Eng	I	3
CI8	Surveying IV	CI7	2	3	0	Eng	I	3
CI9	Surveying III, F & P	CI5,6,7	1	0	5	Eng	I	3
CI10	Surveying IV, F & P	CI8,9	1	0	5	Eng	I	3
CI11	Hydraulics	ME20,21	2½	4	0	Eng	I,II,III,V	3
CI12	Hydraulics	CI11	2	3	0	Eng	I,II,V	3
CI15	Theory of Structures	ME22,23	3	4	0	Eng	I	4
CI16	Theory of Structures	CI15	3	4	0	Eng	I	4
CI18	Concrete Testing Lab.	ME69	1½	1	3	Eng	I	4
CI21	Sanitary Engineering	CI11,12	2	3	0	Eng	I	4
CI22	Sanitary Engineering	CI21	2	3	0	Eng	I	4
CI23	Engineering Structures	CI15,16,ME23	3	4	0	Eng	I	5
CI24	Engineering Structures	CI23	3	4	0	Eng	I	5
CI25	Concrete	ME23,CI18	2	4	0	Eng	I	5

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
Civil Engineering — Continued								
CI26	Concrete	CI25	2	4	0	Eng	I	5
CI29	Design of Structures	CI23,25	3	2	9	Eng	I	5
CI30	Design of Structures	CI24,26,29	3	2	9	Eng	I	5
CI31	Highway Engineering	CI17,9	2	3	0	Eng	I	5
CI32	Highway Engineering	CI31	2	3	0	Eng	I	5

Drawing and Graphic Arts

D1	Engineering Drawing		3	6	0	Eng,LA	{ E,All LA,Applied Science	1
D2	Descriptive Geometry	D1	3	6	0	Eng,LA	{ E,All LA,Applied Science	1
D3	Machine Drawing	D1	2	6	0	Eng	III	2
D4	Machine Drawing	D1	2	6	0	Eng	II,V	2

English

E1	English I		3	3	0	Eng,LA	{ E,All LA,Applied Science	1
E2	English I	E1	3	3	0	Eng,LA	{ E,All LA,Applied Science	1
E1-A	English I		3	3	0	LA	All	1
E2-A	English I		3	3	0	LA	All	1
E1-B	Fundamentals Bus. English		3	3	0	BA	All	1
E2-B	Fundamentals Bus. English		3	3	0	BA	All	1
E3-B	Business Communication		2	3	0	BA	All	2
E4-B	Business Communication		2	3	0	BA	All	2
E5-B	Advanced Report Writing		2	3	0	BA	Elective	
E5	Advanced Composition	E2-A,1-A	2	3	0	LA	English	3
E6	Advanced Composition	E5	2	3	0	LA	English	3
E7	Creative Writing	E6	2	3	0	LA	Elective	
E8	Creative Writing	E7	2	3	0	LA	Elective	
E9	Journalism I		3	4	0	LA,BA	Elective	
E10	Journalism I	E9	3	4	0	LA,BA	Elective	
E11	Journalism II	E10	3	4	0	LA,BA	Elective	
E12	Journalism II	E11	3	4	0	LA,BA	Elective	
E13	Effective Speaking		1	2	0	BA	Elective	
E14	Effective Speaking	E13	1	2	0	BA	Elective	
E15	Survey of English Lit.		3	4	0	LA	{ Eng.&S.S. Math&Phys.	2
E16	Survey of English Lit.		3	4	0	LA	{ Eng.&S.S. Math&Phys.	2
E17	English Drama before Shakespeare		2	3	0	LA	English	
E18	Chaucer		2	3	0	LA	English	
E19	Shakespeare		2	3	0	LA	English	3
E20	Shakespeare		2	3	0	LA	English	3
E21	19th Cent. Poetry I		2	3	0	LA	Elective	
E22	19th Cent. Poetry II		2	3	0	LA	Elective	
E23	17th & 18th Cent. Prose		2	3	0	LA	Elective	
E24	19th Cent. Prose		2	3	0	LA	Elective	
E25	American Lit. to 1860		2	3	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>English — Continued</i>								
E26	American Lit. after 1860		2	3	0	LA	Elective	
E27	History of English Novel		2	3	0	LA	Elective	
E28	History of English Novel		2	3	0	LA	Elective	
E29	Great European Writers		2	3	0	LA	Elective	
E30	Great European Writers		2	3	0	LA	Elective	
E31	Comparative Drama		2	3	0	LA	Elective	
E32	Comparative Drama		2	3	0	LA	Elective	
E33	Modern Lit. 1895-1915		2	3	0	LA	Elective	
E34	Modern Lit. Since 1915		2	3	0	LA	Elective	
E35	The Essay in England and America		2	3	0	LA	Elective	
E36	Introduction to Criticism		2	3	0	LA	Elective	
E61	Seminar		2	3	0	LA	Elective	
E62	Seminar		2	3	0	LA	Elective	

Economics

Ec1	Economic Geography		3	3	0	BA	All	1
Ec2	Com. & Ind. Hist. of U. S.		4	4	0	BA	All	1
Ec3	Economic Principles		2	3	0	{BA LA	All Engl & S.S.	2 2
Ec4	Economic Principles	Ec3	2	3	0	Same as Ec3		
Ec5	Economic Problems	Ec3	2	3	0	{BA LA	All Econ, Soc	3 3
Ec6	Economic Problems	Ec5	2	3	0	Same as Ec5		
Ec7	Money and Banking	Ec3,4	2	3	0	LA	Elective	
Ec8	Business Cycles	Ec5,6	2	3	0	LA, BA	Elective	
Ec9	Statistics in Business		2	2	2	BA	Elective	
Ec10	Statistics in Business		2	2	2	BA	Elective	
Ec11	Labor Problems	Ec3,4	3	4	0	LA, BA	Elective	
Ec12	Economic Systems	Ec3,4	2	3	0	LA, BA	Elective	
Ec14	Inter. Ec. Relations	Ec5,6	3	4	0	LA, BA	Elective	
Ec15	Hist. of Econ. Thought	Ec5,6	2	3	0	LA, BA	Elective	
Ec16	Adv. Econ. Theory	Ec15	2	3	0	LA, BA	Elective	
Ec17	Statistics		2	3	0	LA	Elective	
Ec18	Statistics	Ec17	2	3	0	LA	Elective	
Ec21	Economics		2	3	0	Eng, LA	{All(E) LA, Chem	3
Ec22	Economics	Ec21	2	3	0	Eng, LA	{All(E) LA, Chem	3
Ec61	Seminar		2	3	0	LA	Elective	
Ec62	Seminar	Ec61	2	3	0	LA	Elective	
Ec65	Thesis		3			LA	Elective	
Ec66	Thesis		3			LA	Elective	

Education

Ed1	History of Education		2	3	0	LA	Elective	
Ed2	History of Education		2	3	0	LA	Elective	
Ed3	Educ. Measurements		2	3	0	LA	Elective	
Ed4	Educ. Org. and Adm.		2	3	0	LA	Elective	
Ed7	Comparative Education		2	3	0	LA	Elective	
Ed9	Educ. Sociology		2	3	0	LA	Elective	
Ed10	Educ. Philosophy		2	3	0	LA	Elective	
Ed11	Principles of Secondary Education		2	3	0	LA	Elective	
Ed12	Methods of Teaching in Secondary Schools		3	4	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Electrical Engineering</i>								
EL1	Electrical Eng. I	P2	1	3	0	Eng	III	2
EL2	Electrical Eng. I	EL1	1	3	0	Eng	III	2
EL5	Electrical Machinery	P2	4	4	4	Eng	I,II,V	2
EL5A	Electrical Machinery	P2,M6	4	4	4	Eng	IV	5
EL6	Electrical Measurements	EL5	2½	3	3	Eng	II,V	3
EL9	Electrical Eng. II	P2	1½	3	0	Eng	III	3
EL10	Electrical Eng. II	M7	2	3	0	Eng	III	3
EL11	Electrical Eng. Lab.	EL2	1	0	3	Eng	III	3
EL12	Electrical Eng. Lab.	EL10	1	0	3	Eng	III	3
EL13	Elec. Measurements I	EL9	2½	4	0	Eng	III	3
EL14	Elec. Measurements II	EL10,13	2	3	0	Eng	III	3
EL17	Electrical Eng. III	EL10,M6	2	3	0	Eng	III	4
EL18	Electrical Eng. III	EL17	2	3	0	Eng	III	4
EL19	Electrical Testing Lab.	EL17	2	2	3	Eng	III	4
EL20	Electronics Lab. I		1½	1	3	Eng	III	4
EL21	Electronics	M7,P2	1	2	0	Eng	III	4
EL22	Electronics	EL21	2½	4	0	Eng	III	4
EL23	Elec. Measurements Lab.	EL13,14	2	0	3	Eng	III	4
EL24	Adv. Measurements Lab.	EL13,14	2	0	3	Eng	III	4
EL25	Electrical Eng. IV	EL18	2½	4	0	Eng	III	5
EL26	Electrical Eng. IV	EL25	2½	4	0	Eng	III	5
EL27	Adv. Elec. Eng. Lab.	EL25	2	2	3	Eng	III	5
EL28	Adv. Electronics Lab.	EL20,22,30,32,36,37	2	1	3	Eng	III	5
EL29	Electrical Eng. V-A	EL21,22	2	3	0	Eng	III	5
EL30	Electrical Eng. V-A	EL29,32	2	3	0	Eng	III	5
EL31	Electrical Eng. V-B	M7	2	3	0	Eng	III	5
EL32	Electrical Eng. V-B	EL31	2	3	0	Eng	III	5
EL35	Ultra High Frequency Technique	EL29,31	2	4	0	Eng	III	5
EL36	Ultra High Frequency Technique	EL32,35	2	4	0	Eng	III	5
EL37	Electronics Lab. II	EL20,21,22,29,31,35	1½	1	3	Eng	III	5
EL38	Ultra High Freq. Tech. Lab.	EL20,22,29,30,32,36,37	1½	1	3	Eng	III	5
<i>French</i>								
F1	Elementary French		3	5	0	LA	Elective	
F2	Elementary French	F1	3	5	0	LA	Elective	
F3	Intermediate French	F2	3	3	0	LA	Elective	1
F3	Intermediate French	F1	3	4	0	LA	Elective	
F4	Intermediate French	F3	3	3	0	LA	Elective	1
F4	Intermediate French	F3	3	4	0	LA	Elective	
F5	Modern French Literature	F4	3	4	0	LA	Elective	
F6	Modern French Literature	F5	3	4	0	LA	Elective	
F7	French Classicism	F4	3	4	0	LA	Elective	
F8	French Classicism	F4	3	4	0	LA	Elective	
F9	French Romanticism	F4	3	4	0	LA	Elective	
F10	French Romanticism	F9,F4	3	4	0	LA	Elective	
<i>Banking and Finance</i>								
F13	Business Finance		2	3	0	BA	All	3
F14	Finance Problems		2	3	0	BA	All	3
F16	Banking and Business	Ec3	2	3	0	BA	Elective	
F18	Adv. Banking Problems		3	4	0	BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Banking and Finance — Continued</i>								
FI9	Investments		3	4	0	BA	Elective	
FI10	Investments		3	4	0	BA	Elective	
FI12	Public Finance		2	3	0	BA	Elective	
FI13	Real Estate Practice and Appraising		3	4	0	BA	Elective	
FI14	Insurance Principles and Practice		3	4	0	BA	Elective	
<i>German</i>								
G1	Elementary German		3	5	0	LA	Elective	
G1	Elementary German		3	3	0	LA	Elective	1
G2	Elementary German		3	5	0	LA	Elective	
G2	Elementary German	G1	3	3	0	LA	Elective	1
G3	Intermediate German	G2	3	4	0	LA	Elective	
G4	Intermediate German	G3	3	4	0	LA	Elective	
G5	Modern German Lit.	G4	3	4	0	LA	Elective	
G6	Modern German Lit.	G4	3	4	0	LA	Elective	
G7	Class. Per. of Ger. Lit.	G4	3	4	0	LA	Elective	
G8	Class. Per. of Ger. Lit.	G4	3	4	0	LA	Elective	
G9	Ger. Lit. of 19th Cent.	G4	3	4	0	LA	Elective	
G10	Ger. Lit. of 19th Cent.	G4	3	4	0	LA	Elective	
<i>Government</i>								
Gv1	Am. Govt. and Politics		3	3	0	{BA LA	All Elective S.S. Elective	1 1
Gv2	Am. Govt. and Politics		3	3	0	{BA LA	All Elective S.S. Elective	1 1
Gv3	Comparative Govt.		2	3	0	{BA LA	Elective	
Gv4	Comparative Govt.		2	3	0	{BA LA	Elective	
Gv5	Am. Const. Law		2	3	0	LA	Elective	
Gv5-B	Constitutional Law		3	4	0	BA	Elective	
Gv6	Am. Const. Law	Gv5	2	3	0	LA	Elective	
Gv7	Origins of Political Theory		2	3	0	{BA LA	Elective	
Gv8	Modern Political Theory		2	3	0	{BA LA	Elective	
<i>Geology</i>								
Gy1	General Geology		2	3	0	Eng	I	4
Gy2	General Geology	Gy1	2	3	0	Eng	I	4
Gy5	Historical Geology	Gy2	2	3	0	LA	Elective	
Gy6	Historical Geology	Gy5	2	3	0	LA	Elective	
<i>History</i>								
H1	History of Civilization		4	4	0	{BA LA	Elective Soc.Sci.Elect.	1 1
H2	History of Civilization		4	4	0	Same as H1		
H5	Europe 1789-1870		2	3	0	LA	Elective	
H6	Europe since 1870		2	3	0	LA	Elective	
H7	England to 1688		2	3	0	LA	English	3
H8	England since 1688		2	3	0	LA	English	3
H9	United States to 1865		2	3	0	LA,BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>History — Continued</i>								
H10	United States since 1865		2	3	0	LA,BA	Elective	
H11	Latin American History		2	3	0	LA	Elective	
H12	Latin American History		2	3	0	LA	Elective	
H13	English Const. History		3	4	0	LA	Elective	
H14	American Const. History		3	4	0	LA	Elective	
H15	Far East Int. Rel. 1840-1900		2	3	0	LA	Elective	
H16	Far East Int. Rel. since 1900		2	3	0	LA	Elective	

Industrial Administration

IA1	Industrial Management I		2	3	0	BA	All	2
IA2	Industrial Management II		2	3	0	BA	All	2
IA3	Personnel Administration		3	4	0	BA	Elective	
IA4	Personnel Problems		3	4	0	BA	Elective	
IA6	Motion and Time Study		3	4	0	BA	Elective	
IA14	Production Processes I		3	4	0	BA	Elective	

Industrial Engineering

IN3	Production Processes I		2½	4	0	Eng	II,III,V	2
IN4	Production Processes II		1½	2	0	Eng	II,III,V	2
IN5	Industrial Mgt. I		2	3	0	{Eng I	II,V	4 5
IN6	Industrial Mgt. II	IN5	2	3	0	Same as IN5		
IN7	Industrial Accounting		2½	1	4	Eng	V	4
IN8	Industrial Accounting	IN7	4	1	4	Eng	V	4
IN9	Cost Accounting	IN8	2½	2	2	Eng	V-Elective	5
IN10	Cost Accounting	IN9	2½	2	2	Eng	V-Elective	5
IN11	Methods Engineering	IN6	2½	2	2	Eng	V-Elective	5
IN14	Ind. Finance		2½	3	0	Eng	V	5
IN15	Sales Engineering		2½	3	0	Eng	V	5
IN17	Personnel Administration		3	4	0	Eng	II,V	5
IN22	Contracts		2	3	0	Eng	II,V	5
IN23	Industrial Statistics		2	2	2	Eng	V	4
IN24	Industrial Statistics		2	2	2	Eng	V	4
IN27	Industrial Management		2	3	0	Eng	IV	5
IN28	Motion and Time Study		3	2	3	Eng	V	3
IN30	Tech. Exec. Cont.		3	4	0	Eng	V	5

Business Law

L1	Legal Bases of Business		2	3	0	BA	All	2
L2	Legal Bases of Business		2	3	0	BA	All	2

Mathematics

M1	College Algebra		3	3	0	{Eng LA	All App & Pure Sci	1 1
M1-A	Mathematics A		3	4	0	BA,LA	Elective	4,5
M2-A	Mathematics B		3	4	0	BA,LA	Elective	4,5
			2	2	0	{Eng LA	All App & Pure Sci	1 1
M3	Trigonometry							
M4	Analytic Geometry and Intro. to Calculus	M1,3	5	5	0	Same as M1		

No.	Course	Pre-requisite	Sem.	Class	Lab.	College	Curriculum	Yr.
			Hrs.	Hrs.	Hrs.			
<i>Mathematics — Continued</i>								
M5	Differential Calculus	M1,4	3	4	0	{ Eng LA	All Math&Phys, Chem	2 2
M6	Integral Calculus	M5	3	4	0	Same as M5		
M7	Differential Equations I	M6	2½	4	0	Eng	III,IV	3
M8	Differential Equations II	M6,7	3	4	0	LA	Math&Phys	
M9	Higher Algebra	M1,3,4	3	4	0	LA	Elective	
M10	Curve Analysis	M5	3	4	0	LA	Elective	
M11	Solid Anal. Geometry	M4	3	4	0	LA	Elective	
M12	Modern Geometry	M4	3	4	0	LA	Elective	
M13	Spherical Trigonometry	M3	3	4	0	LA	Elective	
M14	Hist. of Mathematics		2	3	0	LA	Elective	
M15	Advanced Calculus	M6	3	4	0	LA	Math&Phys	3
M16	Advanced Calculus	M15	3	4	0	LA	Math&Phys	3
M17	Series	M5,6	3	4	0	LA	Elective	
M18	Theory of Equations	M5,6	3	4	0	LA	Elective	
M31	Mathematics I		3	3	0	{ LA BA	S.S. Elective Elective	1 1
M32	Mathematics II		3	3	0	Same as M31		

Marketing and Advertising

MA1	Marketing Principles		3	4	0	BA	All	3
MA2	Marketing Problems		3	4	0	BA	All	3
MA3	Sales Management		3	4	0	BA	Elective	
MA4	Sales Management		3	4	0	BA	Elective	
MA5	Advertising Principles		3	4	0	BA	Elective	
MA6	Advertising Problems		3	4	0	BA	Elective	
MA7	Retail Store Mgt.		3	4	0	BA	Elective	
MA8	Retail Merchandising		3	4	0	BA	Elective	

Mechanical Engineering

ME1	Mechanism		3	6	0	Eng	II & V	3
ME15	Industrial Plants	ME23,32	2½	6	0	Eng	II—Elective	5
ME16	Industrial Plants	ME15	2½	6	0	Eng	V,II—Elective	5
ME20	Applied Mech. (Statics)	P1	3	4	0	Eng	All	2
ME21	Applied Mech. (Kinetics)	ME20	3	4	0	Eng	All	3
ME22	Strength of Materials	ME20,21,P4	3	4	0	Eng	All	3
ME23	Strength of Materials	ME22	2	3	0	Eng	I,II,V	4
ME24	Advanced Mechanics	ME23	2	3	0	Eng	I,II	4
ME25	Strength of Materials		1½	2	0	Eng	III	4
ME27	Metallography	IN3	2	3	0	Eng	II & V	3, 4
ME29	Heat Eng. (Power Pl't Eq.)		2	3	0	Eng	II	3
ME30	Heat Eng. (Thermo.)	P4	3	4	0	Eng	II,IV	3
ME31	Heat Engineering	ME30,29	2½	4	0	Eng	II	4
ME32	Heat Engineering	ME31	2½	4	0	Eng	II	4
ME33	Refrigeration	ME32	2	3	0	Eng	II—Elective	5
ME34	Steam Turbines	ME31	2	3	0	Eng	II—Elective	5
ME35	Heat Engineering	P4	2	3	0	Eng	I	3
ME36	Heat Engineering	ME35	2½	2	3	Eng	III & V	4
ME39	Engine Dynamics	ME21	2½	4	0	Eng	II—Elective	5
ME40	Aerodynamics	ME21,CI12	2	3	0	Eng	II—Elective	4
ME42	Heating and Air Cond.	ME21,CI12	2	3	0	Eng	{ II—Elective V	4 5
ME44	Power Plant Eng.	ME32	2½	4	0	Eng	II	5
ME51	Machine Design	ME24	3	6	0	Eng	II	5
ME52	Machine Design	ME51	3	6	0	Eng	II	5

No.	Course	Pre-requisite	Sem. Class Lab.			College	Curriculum	Yr.
			Hrs.	Hrs.	Hrs.			
Mechanical Engineering — Continued								
ME61	Mechanical Eng. Lab.	ME29,31	2	0	4	Eng	II & V	4
ME62	Mechanical Eng. Lab.	ME32,61	2	0	4	Eng	II & V	4
ME63	Mechanical Eng. Lab.	ME32,62	2½	1	3	Eng	II	5
ME69	Testing Materials Lab.	ME22	1½	1	3	Eng	I & V	4, 5
ME73	Aircraft Structures	ME23	2	3	0	Eng	II—Elective	5
ME74	Aircraft Structures		2	3	0	Eng	II—Elective	5
ME76	Aircraft Eng. Design	ME39	2½	6	0	Eng	II—Elective	5

Physics

P1	Physics I		3	3	0	{ Eng LA	All App & Pure Sci	1 1
P2	Physics I		3	3	0	Same as P1		
P3	Physics II	P1,2	2	3	0	{ Eng LA	All Math&Phys,	2 2
P3-A	General Physics		4	4	4	{ LA LA	Chem Biol.	3 2
P4	Physics II	P1,2	2	3	0	{ Eng LA	All Math&Phys,	2 2
P4-A	General Physics		4	4	4	{ LA LA	Chem Biol.	2 2
P5	Physics Laboratory	P1,2	1	0	2	{ Eng LA	I,II,IV,V Math&Phys,	2 2
P6	Physics Laboratory	P1,2	1	0	2	{ LA LA	Chem Math&Phys,	2 2
P7	Physics Laboratory	P1,2	2	0	4	Eng	III	2
P8	Physics Laboratory	P1,2	2	0	4	Eng	III	2
P9	Optics	P3,M6	3	3	2	LA	Elective	
P10	Optics	P9	3	3	2	LA	Elective	
P13	Acoustics	P3,M6	3	3	2	LA	Elective	
P14	Acoustics	P13	3	3	2	LA	Elective	
P15	Modern Physics	P4,M7	3	3	2	LA	Elective	
P16	Modern Physics	P15	3	3	2	LA	Elective	
P31	Introduction to Physics	M31	4	4	0	{ LA BA	Soc Sci Elective	1 1
P32	Introduction to Physics	M32	4	4	0	Same as P31		
P65	Thesis		3			LA	Elective	
P66	Thesis		3			LA	Elective	
P101	Theoretical Physics		3			LA	Graduate	
P102	Theoretical Physics		3			LA	Graduate	
P103	Quantum Mechanics		3			LA	Graduate	
P104	Quantum Mechanics		3			LA	Graduate	
P105	Applied Mathematics		3			LA	Graduate	
P106	Applied Mathematics		3			LA	Graduate	
P107	Graduate Thesis		2-4			LA	Graduate	
P108	Graduate Thesis		2-4			LA	Graduate	
P109	Graduate Thesis		2-4			LA	Graduate	
P110	Graduate Thesis		2-4			LA	Graduate	

Public Administration

PA2	Public Administration I		3	4	0	BA	Elective	
PA4	Political Concepts		3	4	0	BA	Elective	
PA5	Bus. and Govt.		2½	4	0	BA	Elective	

No.	Course	Pre-requisite	Sem. Hrs.	Class Hrs.	Lab. Hrs.	College	Curriculum	Yr.
<i>Public Administration — Continued</i>								
PA7	Public Administration II		3	4	0	BA	Elective	
PA8	Public Administration III		3	4	0	BA	Elective	
<i>Physical Education</i>								
PE1	Hygiene		1	1	0	All		1
PE3	Physical Training		0	2	0	All		1
PE4	Physical Training		0	2	0	All		1
PE5	Princ. of Phys. Ed.		2	3	0	LA	Elective	
PE6	Play and Recreation		2	3	0	LA	Elective	
PE7	Hist. of Phys. Ed.		2	3	0	LA	Elective	
PE8	Admin. of Phys. Ed.		2	3	0	LA	Elective	
PE9	Football		2	3	0	LA	Elective	
PE11	Track and Field Events		2	3	0	LA	Elective	
PE12	Basketball and Baseball		2	3	0	LA	Elective	
<i>Philosophy</i>								
Ph1	Intro. to Philosophy		2	3	0	LA	Elective	
Ph2	Problems of Philosophy		2	3	0	LA	Elective	
Ph3	History of Philosophy		2	3	0	LA	Elective	
Ph4	History of Philosophy		2	3	0	LA	Elective	
Ph5	Philosophy of Religion		2	3	0	LA	Elective	
Ph6	Logic		2	3	0	LA	Elective	
<i>Psychology</i>								
Ps1	Intro. to Diff. Psych.		2	3	0	LA	Engl.,S.S.	2
Ps2	General Psychology		2	3	0	LA	Engl.,S.S.	2
Ps1-B	Psychology		2	3	0	BA	Elective	
Ps2-B	Psychology		2	3	0	BA	Elective	
Ps3	Experimental Psychology	Ps2	3	2	4	LA	Psych	3
Ps4	Differential Psychology	Ps3	3	2	4	LA	Psych	3
Ps5	Educ. Psychology	Ps2	3	4	0	LA	Elective	
Ps7	Soc. Psych. of Everyday Life		2	3	0	LA	Psych	3
Ps8	Soc. Psych. Theory and Methods		2	3	0	LA	Psych	3
Ps9	Psych. of Personality	Ps2	3	4	0	LA	Elective	
Ps10	Abnormal Psychology	Ps9	3	4	0	LA	Elective	
Ps11	Applied Psychology	Ps9	2	3	0	LA	Elective	
Ps13	Psychological Testing	Ps4	2	3	0	LA	Elective	
Ps14	Adv. Experimental Lab.	Ps3	2	3	0	LA	Elective	
Ps61	Seminar		2	3	0	LA	Elective	
Ps62	Seminar	Ps61	2	3	0	LA	Elective	
<i>Sociology</i>								
S1	Intro. to Sociology		2	3	0	{Eng BA LA	All All Engl.,S.S.	4 3 2
S2	Principles of Sociology		2	3	0	Same as S1		
S3	Social Problems	S1,2	2	3	0	LA,BA	Elective	
S4	Social Pathology	S1,2	2	3	0	LA,BA	Elective	
S5	Criminology	S1,2	2	3	0	LA	Elective	
S6	Penology	S5	2	3	0	LA	Elective	
S7	Prin. of Social Ethics	S1,2	2	3	0	LA	Elective	
S8	Probs. in Social Ethics	S7	2	3	0	LA	Elective	
S9	The Family	S1,2	2	3	0	LA	Elective	

No.	Course	Pre-requisite	Sem. Class Lab.			College	Curriculum	Yr.
			Hrs.	Hrs.	Hrs.			
Sociology — Continued								
S10	The Family	S9	2	3	0	LA	Elective	
S11	Social Control	S3,4,Ph2	2	3	0	LA	Elective	
S12	Social Progress	S11	2	3	0	LA	Elective	
S13	Population Problems	S1,2	2	3	0	LA	Elective	
S14	Urban Sociology	S1,2	2	3	0	LA	Elective	
S15	History of Sociological Thought	S3,4,Ph2	2	3	0	LA	Elective	
S16	Sociology of Religion	S3,4	2	3	0	LA	Elective	
S61	Seminar		2	3	0	LA	Elective	
S62	Seminar	S61	2	3	0	LA	Elective	
S65	Thesis		3			LA	Elective	
S66	Thesis		3			LA	Elective	
Spanish								
Sp1	Elementary Spanish		3	3	0	LA	S.S.Elective	1
Sp1	Elementary Spanish		3	5	0	LA,BA	Elective	
Sp2	Elementary Spanish	Sp1	3	3	0	LA	S.S.Elective	1
Sp2	Elementary Spanish	Sp1	3	5	0	LA,BA	Elective	
Sp3	Intermediate Spanish	Sp2	3	4	0	LA,BA	Elective	
Sp4	Intermediate Spanish	Sp3	3	4	0	LA,BA	Elective	
Sp5	Span. Lit. of the Golden Age	Sp4	3	4	0	LA	Elective	
Sp6	Span. Lit. of the Golden Age	Sp4	3	4	0	LA	Elective	
Sp7	Mod. Spanish Literature	Sp4	3	4	0	LA	Elective	
Sp8	Mod. Spanish Literature	Sp4	3	4	0	LA	Elective	
Sp9	Mod. Span.-American Lit.	Sp4	3	4	0	LA	Elective	
Sp10	Mod. Span.-American Lit.	Sp4	3	4	0	LA	Elective	
Unclassified								
U4	Business Policy		2½	4	0	BA	Elective	
Ps2-A	Orientation		0	1	0	All		1
	Thesis (see page 97)							

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OFFICE HOURS

DEPARTMENT OF ADMISSIONS

9 A.M. to 4 P.M. daily
Saturday 12.00 N'N

Wednesday Evenings by
Appointment

Northeastern University

College of Business Administration

Paste a Small

Photo or

Snapshot

in This Space

APPLICATION FOR ADMISSION

(A non-returnable fee of five dollars must accompany this application. Make checks, money orders, or drafts payable to Northeastern University)

Boston, Mass. 19

To Director of Admissions:

I (Please print)
name in full)

hereby respectfully apply for admission to the College of Business Administration to major in the field checked:

- | | |
|--|--|
| <input type="checkbox"/> Accounting | <input type="checkbox"/> Industrial Administration |
| <input type="checkbox"/> Banking and Finance | <input type="checkbox"/> Public Administration |
| <input type="checkbox"/> Marketing and Advertising | <input type="checkbox"/> Journalism |
| | <input type="checkbox"/> Pre-Legal |

for the school period beginning 19.....

NOTE: The applicant should fill out the following form (both sides) with care.

Residence.....Street

Town or City.....

State.....Tel.....

Date of Birth.....Age.....

Place of Birth.....

Race.....Religion.....Nationality.....

Graduate of.....High School, Year.....

Location of High School.....

Name of Principal.....

Other high schools you attended.....

Names of Principals.....

If not a graduate, state the years of attendance and why you left.....

Father's, Mother's, or Guardian's Name.....

Address.....

Father's work, business or profession.....

Names and addresses of two other persons, to whom we may direct inquiries concerning you.

Weight.....Height.....

Have you any physical infirmities? Explain, if any.....

Defects of speech.....

Defects of hearing.....

Defects of sight.....

Bodily infirmities.....

Is your general health good, fair, or poor?.....

Have you done collegiate work elsewhere?.....

If so, name and address of college or university.....

Name of person who will furnish transcript of your college record.....

Do you expect advance credit for past collegiate work?.....

Are YOU a citizen of the United States?.....

List all athletics and other extra curricula high school activities you have engaged in.....

Names and addresses of all past employers with brief description of each job, length of employment, and wages received.....

Declaration of Parent or Guardian

This application has been read by me and has my approval.

.....
Signature of Parent or Guardian

Date

Milton J. Schlagenhauf, Director of Admissions
Northeastern University
360 Huntington Avenue
Boston, Mass.

Dear Sir:

Please send me additional information on the following points:

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Name

Street and Number

Town or City

State

NORTHEASTERN UNIVERSITY

(CO-EDUCATIONAL)

COLLEGE OF LIBERAL ARTS

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical (with an Aeronautical option), Electrical, Chemical, and Industrial Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

COLLEGE OF BUSINESS ADMINISTRATION

Offers three curricula: Accounting, Marketing and Advertising, and Industrial Administration. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Economics, English, Government, History, Mathematics, Physics, Psychology, and Sociology. A special program preparing for admission to the School of Law is also available. Complete program equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Associate in Arts title conferred.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the co-operative plan. After the freshman year, students may alternate their periods of study with periods of work in the employ of business or industrial concerns at ten-week intervals. Under this plan they gain valuable experience and earn a large part of their college expenses.

In addition to the above schools the University has affiliated with it and conducts: the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the title of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

Law School

Other Schools

47 Mt. Vernon Street

360 Huntington Avenue

Boston, Massachusetts

Telephone: KENmore 5800



Northeastern University

C H O O L O F L A W



Announcement 1943-1944
AND
SUMMER 1944

CALENDAR OF THE SCHOOL OF LAW

SUMMER SEMESTER

1913

17 May	Monday	Summer session begins.
5 July	Monday	Legal holiday, no classes.
13 August	Friday	Summer semester ends.

FALL SEMESTER

1913

13 Sept.	Monday	Fall semester classes begin.
20 Sept.	Monday	End of period for payment of first installment of tuition.
22 Nov.	Monday	Second installment of tuition due.
24 Dec.	Friday	Christmas recess begins.

1914

3 Jan.	Monday	Classes resumed.
14 Jan.	Friday	Fall semester ends.

WINTER SEMESTER

1914

17 Jan.	Monday	Class lectures begin.
17 Jan.	Monday	Payment of third installment of tuition due.
13 March	Monday	Payment of fourth installment of tuition due.
19 May	Friday	Winter semester ends.

SUMMER SEMESTER

1914

22 May	Monday	Classes begin.
4 July	Tuesday	Legal holiday, classes suspended.
18 August	Friday	Summer session ends.

STUDENTS CALLED TO MILITARY SERVICE

In so far as possible, the Administration of Northeastern University and the Faculty of the School of Law will endeavor to see that no student suffers loss of academic standing or of fees paid to the University because of being called into the armed forces of the United States. Individual cases will be considered on their merits as they arise.

THE FRONT COVER

THE FRONT COVER PICTURE, an airplane photo of Beacon Hill by Hartley and Arnold, shows the convenient location of the School of Law, indicated by the white arrow, near the State House in the center foreground and but a few steps from the New Court House, which is shown in the upper right-hand corner of the picture. In the immediate foreground is Boston Common and the entrance to the Park Street subway.

WARTIME STUDY IN LAW

The School of Law recognizes the difficulties which beset those who are seeking a legal education today, and has attempted to minimize them through the efficient utilization of time in the accelerated wartime program of study.

The details of this program are stated on page 5 of this announcement; in general, however, it calls for a three semester calendar year, starting with the Fall Semester beginning September 13, 1943. Without sacrificing the quantity or quality of work previously required for graduation, this program will permit the student to complete the entire regular four-year evening program in three calendar years. With the exception of a few courses where length does not permit, each semester's work will be complete in and of itself, and full programs for first, second, third and fourth year students will be offered each semester. Both beginning and advanced students may commence their work at the start of any semester, which, for the current year, is scheduled to begin on September 13, 1943, January 17, 1944, and May 22, 1944.

The purpose of this program is to offer students an opportunity to become adjusted to law study and proceed therewith as far as possible before entering military service, so that, after the completion of such service, their entrance into postwar professional work will not be unduly delayed. For those who are not eligible for military service, it offers an opportunity to accelerate their professional training during a period when there is a special need for well-trained young lawyers, both men and women, in private offices and the government service.

COURSES OFFERED 1943-1944

FALL SEMESTER

WINTER SEMESTER

First Year

CONTRACTS
TORTS
CRIMINAL LAW
PERSONAL PROPERTY

CONTRACTS
TORTS
PLEADING & PRACTICE I

Second, Third and Fourth Years

EVIDENCE
PROPERTY I
BILLS & NOTES
MORTGAGES
BUSINESS ASSOCIATIONS
LANDLORD & TENANT
CONFLICT OF LAWS
PLEADING & PRACTICE II
TAXATION

EVIDENCE
PROPERTY II
SALES
INSURANCE
BUSINESS ASSOCIATIONS
WILLS
DAMAGES
TRUSTS
PROPERTY III
CONSTITUTIONAL LAW

SUMMER TERM, 1944

22 MAY-19 AUGUST

First Year

PERSONAL PROPERTY
CRIMINAL LAW
PLEADING & PRACTICE I

Second, Third and Fourth Years

PROPERTY I
BILLS AND NOTES
PLEADING & PRACTICE II
LANDLORD & TENANT
MORTGAGES
TAXATION
PROPERTY II

ACCELERATED WARTIME PROGRAM

Under the accelerated program, beginning and advanced standing students may enter at the beginning of any semester, either in May, September or January, as candidates for the degree of Bachelor of Laws.

STANDARDS OF LEGAL EDUCATION

The American Bar Association is of the opinion that every candidate for admission to the Bar should give evidence of graduation from a Law School complying with the following requirements:

It shall require as a condition of admission at least two years of study in a college.

It shall require its students to pursue a course of three years' duration if they devote substantially all of their working time to their studies, and a longer course equivalent in the number of working hours, if they devote only part of their working time to their studies.

It shall provide an adequate library available for the use of the students.

It shall have among its teachers a sufficient number giving their entire time to the school to insure actual personal acquaintance and influence with the whole student body.

It shall not be operated as a commercial enterprise, and the compensation of any officer or member of its teaching staff shall not depend on the number of students or the fees received.

Northeastern University School of Law subscribes to all of the above standards, and has been provisionally approved by the American Bar Association.

COMMUNICATIONS SHOULD BE ADDRESSED TO NORTHEASTERN UNIVERSITY SCHOOL OF LAW

47 MT. VERNON STREET, BOSTON, MASS.

Telephone, Kenmore 5800

GIFTS AND BEQUESTS

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

THE NORTHEASTERN UNIVERSITY CORPORATION

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SINCLAIR WEEKS

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SCHOOL OF LAW

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 STUART MACMILLAN, Ph.B., LL.B., *Lecturer in Conflict of Laws*
 LEON BETTONEY NEWMAN, A.B., LL.B., *Lecturer in Pleading & Practice II and Appellate Practice*
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 ROBERT RAYMOND ELLIOTT

*On leave of absence, military service.

ORGANIZATION AND PURPOSE

The School of Law of Northeastern University was established in 1898, and is the oldest Law School in New England conducting classes in the evening. Over the years the School has had, and has at present, an unusual faculty of men who are outstanding leaders in the legal profession. In the forty-five years of its existence the School has come to enjoy a highly favorable recognition and endorsement by the bench and by the bar. Its graduates have attained high professional achievement. Many others of its alumni have won positions of leadership in the fields of business, banking and government service.

The primary purpose of the School is to prepare students for the general practice of the law in any jurisdiction where the system of Anglo-American law prevails, particular attention being given to the law of Massachusetts and the other New England States. The instruction is designed to train students in the fundamental principles of the common law, and to develop their powers of legal reasoning and analysis. The instruction is based on the case method combining the study of basic principles with the analysis and interpretation of decided cases.

LOCATION

Located at 47 Mount Vernon Street, Boston, the Law School is advantageously situated within a few minutes' walk of both the State House and the Court House, where the Supreme Judicial Court, the Superior Court of Suffolk County, the Land Court, the Probate Court for Suffolk County, and the Municipal Court for the City of Boston are housed. Excellent classroom facilities, an extensive Law Library and reading areas, modern conference rooms, as well as adequate administrative and instructional offices, add to the effectiveness of the teaching.

LIBRARY

The Law School Library is well lighted and furnished and easily accessible. It contains 15,000 volumes and is steadily growing. The library is so arranged as to give the student direct access to the books in the stacks as well as in the reading room. The library contains many of the State Reports, the complete National Reporter System, the Federal Reports, and the Reports of the Supreme Court of the United States, the English Reports, Dominion Law Reports, English and American Digests, various State Digests and Statutes, and an extensive collection of encyclopedias, annotations, treatises, legal periodicals, approved textbooks, and all current casebooks.

ACCELERATED WARTIME PROGRAM

For the continuance of the war and thereafter until things have readjusted themselves, the School of Law will operate on an accelerated program by the addition of a summer semester to the regular academic year. The school year has been divided into three sessions, Fall, Winter and Summer, the Fall and Winter sessions each being eighteen weeks in

length, and the Summer session being twelve weeks in length. By attending three Summer sessions in addition to the regular school program, a student is able to complete the required four year course of study within a period of three years.

During the period of the emergency, the regular Day classes of the School will be suspended, all classes being conducted in the evening. The complete evening program maintaining the high standards of achievement and requirements for graduation will be continued under the accelerated program. By doubling the number of class hours per week, former two semester courses have been changed into one semester courses. This enables those called into service at the end of any semester to complete the entire work of the courses taken in each semester instead of completing only half of the work in certain courses. Beginning and advanced students may enter at the commencement of any semester.

Transfers may be accepted from any school which is a member of the Association of American Law Schools or approved by the American Bar Association.

The accelerated program is designed to aid not only those who desire to complete their legal education before entering military service, but also to enable those who are not eligible for military service to shorten the time required to complete their professional training at a time when there is a greater demand for legally trained men and women both in private law offices and in the government services. The war has greatly increased the opportunities for women in the field of law, and these opportunities are likely to continue after the war is over.

PRE-LEGAL COURSE

The content of the pre-legal course is not prescribed. The student who has a particular interest or aptitude should major in the department of his choice, whatever that is. For those students who have no special interest other than to prepare for the study of law, the Faculty of the School of Law recommends that the student endeavor to obtain a thorough training in fundamental subjects, such as English, History and the Social Sciences. Those interested in the Pre-legal Courses offered in the Day and Evening Divisions of the College of Liberal Arts at Northeastern University should address Professor Milton J. Schlagenhauf, Director of Admissions, 360 Huntington Avenue, Boston, Massachusetts.

REQUIREMENTS FOR ADMISSION

CANDIDATES FOR THE DEGREE OF BACHELOR OF LAWS

The School of Law admits men and women. To be admitted as a candidate for the degree of Bachelor of Laws the applicant must be of good moral character, and

- (1) Have received a Bachelor's degree from an accredited college, or
- (2) Have completed satisfactorily in a college of accredited standing one-half the work required and acceptable for the Bachelor's degree granted on the basis of a minimum period of four years' study.

ADVANCED STANDING

To be accepted as a candidate for the degree of Bachelor of Laws, a student from another school must, at the time that he began the law courses for which he desires to receive credit, have been able to satisfy the requirements for candidates for that degree in force at this School at the time of entrance here. This, in effect, means that students from other law schools which are members of the Association of American Law Schools may be accepted as candidates for the degree of Bachelor of Laws provided they met the minimum requirement of that Association of two years of college work at the time that they began the law courses for which they desire credit.

The acceptance of a candidate for advanced standing lies within the discretion of the Dean and Faculty of this School. Credit will be allowed only for work deemed to be satisfactory.

SPECIAL STUDENTS

A limited number of applicants, who are at least twenty-three years of age and who cannot qualify under the foregoing requirements for admission as candidates for the degree of Bachelor of Laws, may, in exceptional cases and at the discretion of the Faculty, be admitted as special students. Applicants for admission as special students must give evidence of such general education and experience as will enable them to carry on and profit by the work of the School. Special students may not be candidates for a degree in the School of Law.

READMISSION

Former students are readmitted only at the discretion of the Faculty and must, upon their return to the School, meet the degree requirements in force at the time of their re-entry.

The Faculty of the School of Law reserves the right to refuse admission or readmission to any applicant.

ADMISSION PROCEDURE

All applicants for admission, whether as candidates for the degree of Bachelor of Laws or as special students, must file with the Registrar of the School of Law:

- (1) An application for admission to be made in writing upon the official form.
- (2) An official transcript of college records.
- (3) Two letters of reference concerning character and ability.

All candidates for advanced standing must forward to the Dean of the School of Law a certificate of good standing from the Dean of their Law School.

For application blanks, catalogs and other information, write to the Office of the Dean, School of Law, Northeastern University, 47 Mt. Vernon St., Boston, Massachusetts.

COURSES

Instruction in the courses of the Day Program in the School of Law has been suspended for the duration of the war. All of the courses will be given in the Evening.

The Faculty of the School of Law reserves the right to make such changes in the order and content of courses in the curriculum as they deem necessary.

FIRST YEAR

AGENCY: Cr. 2

Rights and liabilities arising out of the relation of principal and agent and master and servant. Mechem, Cases on Agency, 3d ed.

CONTRACTS: Cr. 6

Rights and duties arising from promises; requisites for formation of contracts; performance and discharge of contracts; contracts for benefit of third persons; assignments. Shepherd's Revision, Costigan's Cases on Contracts, 4th ed.

CRIMINAL LAW: Cr. 4

A preliminary study of the administration of criminal justice with special reference to characteristics of particular crimes and the general principles of liability to punishment. Sayre, Cases on Criminal Law.

PERSONAL PROPERTY: Cr. 2

A study of property in chattels, application of the concepts of possession and title in the law of personal property; finding; bailment; lien; transfer of chattels by gift; sale and miscellaneous inter vivos transactions; emblements and fixtures. The cases on Personal Property are used to present the substantive law of that subject and to illustrate various philosophies of the law. Bigelow, Cases on Personal Property, 3d ed.

PLEADING AND PRACTICE I: Cr. 3

Original writs; service; return; forms of action at the common law; pleadings in the common law actions; declaration; demurrers; pleas; replications; voluntary non-suit; compulsory non-suit; directed verdict; instructions to jury; verdict; motions after verdict. Magill and Chadburn, Cases on Civil Procedure.

TORTS: Cr. 6

Liability in damages for injuries to person and property inflicted intentionally, negligently or innocently; justification and excuse; contributory negligence; proximate cause. Liability for false representations, defamation, inducing breach of contract, interference with business relations, unfair competition, strikes, etc. The measure of damages in tort cases. Thurston & Seavey, Cases on Torts.

SECOND, THIRD AND FOURTH YEARS

ADMINISTRATIVE LAW: Cr. 3

Issues involved in transferring power to the administrative agency. Right to notice and hearing before the administrative body acts. Adequacy of notice. What constitutes a fair hearing; representation by counsel; testimony under oath; rules of evidence; opportunity to cross-examine and rebut; unbiased tribunal; necessity of findings. Methods of obtaining judicial review of administrative action. Scope of judicial control over administrative action. Gellhorn, *Administrative Law Cases and Comments*.

BILLS AND NOTES: Cr. 3

The law of bills of exchange, promissory notes and checks with special reference to the Negotiable Instruments Law. Campbell, *Cases on Bills and Notes*.

BUSINESS ASSOCIATIONS: Cr. 5

Adaptability of conventional forms of organization to the purposes of the business enterprise. Organization and structure of joint ventures, partnerships, joint stock associations, business trusts, and corporations with relation to allocation of control and risk, and limitation of liability. Duties and rights in property of enterprisers, with remedies for protection and enforcement. Dissolution of the solvent unit. Ballantine and Lattin, *Cases on Private Corporations*.

CONFLICT OF LAWS: Cr. 4

Nature of jurisdiction; executive, legislative, and judicial jurisdiction; problems of domicile and situs for purposes of jurisdiction. Recognition and enforcement of rights created in other jurisdictions. Cheatham, Dowling, Goodrich and Griswold, *Cases on Conflict of Laws*.

CONSTITUTIONAL LAW: Cr. 3

A general study of the judicial process; scope of, and limitations upon, governmental action — due process, equal protection, police power, taxation, eminent domain; the federal system — scope of federal and state powers, jurisdiction to tax, intrastate and interstate commerce. Dowling, *Cases on Constitutional Law*, 2d ed.

DAMAGES: Cr. 2

Rules and standards applicable to the law of damages; interest, expenses of litigation, certainty, avoidable consequences. Exemplary damages. Mitigation of damages. Liquidated damages. Damages in tort and contract actions. Procedural aspects of the assessment of damages. Crane, *Cases on Damages*, 2d ed.

EQUITY: Cr. 5

Origin and history of the jurisdiction of the Court of Chancery; nature, enforcement and effect of equitable decrees; a brief study of specific enforcement of contract, injunctions against tort and crime, and other forms of equitable relief. McClintock, *Cases on Equity*.

EVIDENCE: Cr. 5

The rules of evidence developed in the courts of common law and under the statutes, arranged under the topics — judicial notice, examination of witnesses, privilege and competency, illegally obtained evidence, remote and prejudicial evidence, opinion testimony, hearsay rule and its exceptions, best evidence rule, parol evidence rule, burden of proof and presumptions, judge and jury. Morgan and Maguire, *Cases on Evidence*, 2d ed.

INSURANCE: Cr. 2

Nature and form of the insurance contract and its interpretation and application with respect to various kinds of insurance. Vance, *Cases on Insurance*, 2d ed.

LANDLORD AND TENANT: Cr. 1

This course considers the rights and duties of landlord and tenant as an incident of the relationship form, and also as regulated by the terms of an expressed lease. The legal consequences of various covenants found in leases of farm, business, and residential property will be included in the study. Attention will be given to the creation of the tenancy, legal aspects of its operation, and methods of termination and enforcement. Simpson, *Massachusetts Law of Landlord and Tenant*.

MORTGAGES: Cr. 2

Form, substance, and elements of the mortgage; position of mortgagee and mortgagor; transfer of the mortgaged interest; priority and marshaling. Campbell, *Cases on Mortgages*, 2d ed.

PLEADING AND PRACTICE II: Cr. 3

Courts; jurisdiction; venue; process; service; return; entry of actions; pleadings; motions; interrogatories; trial; verdict; judgment; appellate practice.

PROPERTY I: Cr. 3

Historical introduction to real property with a detailed consideration of the modern law of possessory estates in land, including the fee simple, the fee tail, the life estate, the estate for years, concurrent estates, the history and significance of the Statute of Uses, and the incidents of possessory ownership relative to water, lateral and subjacent support, and air. Powell, *Cases on Possessory Estates*, 2d ed.

PROPERTY II: Cr. 3

The running of covenants, easements and profits, licenses; the Acquisition of Title, adverse possession and prescription; problems of conveyancing; modes of conveyance; execution of deeds, the subject matter, creation of easements by implication, covenants for title, estoppel by deed, and priorities. Aigler, Bigelow and Powell, Vol. II, Cases on Property.

PROPERTY III: Cr. 3

Classification of future interests; construction of limitations; powers, rule against perpetuities; illegal conditions and restraints. Simes, Cases on Future Interests.

SALES: Cr. 3

Transfer of interests in personal property by agreement; rights and remedies of the seller, buyer, and third persons; statute of frauds. Vold, Cases on Sales.

TAXATION: Cr. 2

Financing government through property, estate, inheritance, and gift taxes. Something of the procedure of state property tax collection, taxpayers' remedies, and detailed statutory problems, as well as jurisdiction, purpose, and subject of taxation. Treasury Department, Regulations 79 (Gift Tax); Regulations 80 (Estate Tax). Magill and Maguire, Cases on Taxation (2d ed.), and supplementary material.

TRUSTS: Cr. 4

The creation, administration and termination of express trusts; resulting and constructive trusts; priorities and the rules of bona fide purchase. Scott, Cases on Trusts, 3d ed.

WILLS: Cr. 3

The rationale of succession; descent and distribution; the making and revoking of wills; some problems of construction, including the use of extrinsic evidence in aid of construction; grant of probate and administration, and the administration and final settlement of estates. Costigan, Cases on Wills and Administration, 3d ed.

REQUIREMENTS FOR THE DEGREE

The degree of Bachelor of Laws will be conferred upon those candidates who are of good moral character and who:

- (1) Have pursued in residence the study of law for the required period of time, and have completed the full program of study as prescribed by the Faculty.
- (2) Have passed satisfactory examinations in at least eighty-two semester hours of required courses and have attained therein a minimum weighted average of sixty-seven per cent.

GRADUATION WITH HONORS

As a recognition of superior scholarship, the degree may be granted with special honors, as follows:

CUM LAUDE. To students who have met all of the requirements for the degree and have attained a weighted grade average of eighty-five per cent in eighty-five semester hours of required courses.

MAGNA CUM LAUDE. To students who attain a weighted grade average of ninety-one per cent or better in eighty-five semester hours of required courses.

REGISTRATION

The filing of an application for admission to the School does not constitute registration. All students, including those entering the School for the first time, are required to register personally at the Law School Office and arrange for the payment of their tuition during the registration period.

Students are urged to register before the opening date, if possible.

TUITION AND FEES

TUITION (Evening Program) \$160. Payable in four installments.

The tuition charge for all students carrying less than, and for all courses in addition to, a full program is at the rate of \$8 for each semester hour.

University Fee	— \$0.75	For each semester hour on student's program.
Books and Supplies	— 30.00	Approximately.
Application Fee	— 5.00	Payable with application. Application fees of students who fail to register because they enter the armed forces of the United States will be refunded.
Examination Fees	— 5.00	For each regular make-up examination.
	10.00	For each special examination.
Graduation Fee	— 10.00	Payable thirty days before the student is to be recommended for the degree.

The University reserves the right to change tuition rates or fees whenever in its discretion such action is deemed advisable.

A \$2 deferred payment fee will be added to all bills which are not paid by the Saturday following the date on which the payment falls due. Failure to make the required payments on time, or to arrange for such payments, is considered sufficient cause to bar the student from classes until the matter has been adjusted with the Dean.

WITHDRAWALS

In the event a student is obliged to withdraw from the School for causes deemed adequate by the Committee on Withdrawals, a refund of the unused tuition may be granted provided the application for withdrawal, together with the request for refund, and supporting data, are filed within forty-five days after the student has ceased attendance.

ATTENDANCE

Students are expected to attend with regularity the sessions of all courses in which they are enrolled. Students who are irregular in class attendance without justifiable cause may be dropped from the class rolls or be refused permission to take the final examinations in the course. No student during his attendance at the Law School may be registered in any other school or college, whether of Northeastern University or of any other institution, without the consent of the Dean.

MARKING SYSTEM

A — 90-100	Superior attainment
B — 80-89	Above average attainment
C — 70-79	Average achievement
D — 60-69	Lowest passing grade
F — Failure	Failure to be removed as the Faculty shall determine
Inc.	Postponed examination

GENERAL REGULATIONS

The School reserves the right to cancel any course if registration for it does not justify continuance.

The School also reserves the right, at any time, to make any changes which are deemed advisable in the number and content of courses, their order in the curriculum, and in the rules, regulations and fees of the School.

Attendance at the University is a privilege and not a right. The Faculty Committee reserves the right to require at any time the withdrawal of any student whom it may deem unworthy either on account of his neglect of study, his incapacity for the law or for any grave defect of conduct or character, and no reason for requiring such withdrawal need be given.

DEGREES AWARDED — JUNE, 1943

BACHELOR OF LAWS

NORMAN BENEDICT A'HEARN
 JULIAN DANFORD ANTHONY
 EDWARD LEO DILWORTH
 BRENDA MARIE DISSEL
 VINCENT JOSEPH FARETRA
 GREGORY CONSTANTINE HOOT
 LEWIS ZALMON LAVINE
 MARGURITA McCAFFREY
 FRANCES MARY MORAN

JOHN JOSEPH O'DONNELL
 MARGARET JOSEPHINE ROPER
 PHILIP MICHAEL ROWE
 DANIEL JOSEPH RYAN
 JOHN EMANUEL SHERMAN
 RALPH EUGENE SLOCOMBE
 EARL COTTIER TYLER
 DONALD ATWOOD WELCH
 GEORGE HOUGHTON WHITTUM

Cum Laude

JOHN HANCOCK KIMBALL
 ALAN FREDERICK SAWYER

Magna Cum Laude

ABNER KRAVITZ

MASTER OF LAWS

PHILIP ALAN ARNOLD
 JOSEPHINE BRUSCHETTE
 MARY BARRON DOHERTY
 EUGENE ALBERT DUPRE, JR.
 DEBORAH GREENBERG

MILDRED JOHNSON HUNTER
 SABINA BURNS MARONEY
 HENRY PARKER McLAREN
 MABEL LILLIAN RICHARDS
 MARJORIE PAYNE SEAVEY

STUDENT BODY, 1942-1943

ADAMS, EDGAR WHITTINGTON, JR.	KENNEY, CHARLES P.
A'HEARN, NORMAN B.	KIMBALL, JOHN H.
ALEXANDER, GEORGE R.	KIRSHNER, SIDNEY L.
ANTHONY, JULIAN D.	KRAVITZ, ABNER
APSIT, ELFRIDA	KUTTERUF, ROBERT H.
ARNOLD, PHILIP A.	LANE, ARNOLD S.
ASHLEY, ROBERT D.	LAVINE, LEWIS
BARRETT, ELTON	LEONTINE, FRANK H.
BARTOLETTI, NICHOLAS G.	LEPORE, AMATO V.
BIES, STANLEY A.	LIDDY, CARL
BOGESE, STEPHEN B.	McCAFFREY, MARGURITA
BOYD, ROBERT B.	McLAREN, HENRY P.
BRUSCHETTE, JOSEPHINE	McNEIL, G. MALCOLM
BRYCE, ANTHONY F.	McSHARRY, THOMAS F.
BURGGRAAF, STANLEY R.	MAGNANT, LAWRENCE C.
BYNOE, VICTOR C.	MANNING, LEE
CARLSON, EDWARD W.	MARASPIN, DAVIS G.
CUCINOTTA, JOHN V.	MARONEY, SABINA B.
DEVLIN, JOHN H., JR.	MEREDITH, LOUISE S.
DILWORTH, EDWARD L.	MOORE, FANNIE F.
DINEEN, JAMES H.	MORAN, FRANCES M.
DISSEL, BRENDA M.	MYCOCK, MARJORIE E.
DOHERTY, MARY B.	NORRIS, JOHN W.
DONNA, JOHN J.	OBER, HARLAN F.
DRISCOLL, GEORGE O.	O'CONNELL, JOHN G.
DUDLEY, VIRGINIA D.	O'DONNELL, JOHN J.
DUPRE, EUGENE A., JR.	O'NEIL, PAULINE A.
EWART, DAVID C.	PARSONS, RUTH
FARETRA, VINCENT J.	PERKINS, MARVIN E., JR.
FINN, THELMA B.	PETERSEN, TYCHO M.
FITZGERALD, CLARENCE O.	PILCHER, COLE H.
FOLEY, DAVID	PORTNOY, IRVING M.
FOLEY, FRANCIS M.	POWERS, ROBERT K.
FOSTER, EUGENE W.	RICHARDS, MABEL L.
FOSTER, FREDERICK J.	ROPER, MARGARET J.
GEBHARD, LEONARD, JR.	ROWE, PHILIP M.
GOLDBERG, LEON	RYAN, DANIEL J.
GOODMAN, MILTON B.	RYAN, KATHLEEN T.
GREENBERG, DEBORAH	SALERNO, LUCIAN R.
GUNN, TOWNSEND M.	SANDERSON, A. MAUD
HACKETT, HAROLD W.	SATENSTEIN, LEON N.
HAND, LYNWOOD E.	SAVAGE, PHILIP N.
HEIST, RAY K.	SAWYER, ALAN F.
HOLLAND, PHILIP	SCHMIDT, NORMAN B.
HOOT, GREGORY C.	SCHWEITZER, HOWARD
HORN, ASHER D.	SEAVEY, MARJORIE P.
HUNT, ERNEST M.	SKALIN, E. KARL
HUNTER, MILDRED J.	SHERMAN, JOHN E.
JOHNSON, BLANCHE H.	SLOCOMBE, RALPH E.
JOHNSON, MARTHA B.	SMOOKLER, JACK
KEAY, FREEMAN A.	STONE, PAUL M.
KELLEY, ELLIOT G.	THOMSON, MAUD A.
KELLEY, GEORGE E.	TINGUS, ANDREW G.

TORIGIAN, VAHEN P.
TYLER, EARL C.
VAN DER WALDE, LUDWIG
WARD, ROBERT G.
WELCH, DONALD A.
WEST, KENNETH P.
WHITMORE, WILLIAM D., 3RD

WHITTUM, GEORGE H.
WILBUR, HARLAND A.
WILKINSON, S. FRANCES
WINTON, ROBERT J.
WYPLER, ALFRED R., JR.
YOUNG, RHODA E.

STUDENT BODY — SUMMER SCHOOL, 1943

ALEXANDER, GEORGE R.
BARRETT, ELTON
BENNETT, FREDERICK L.
BERKOWITZ, HYMAN S.
BETZ, WILLIAM A.
BOYD, ROBERT B.
BURGGRAAF, STANLEY R.
COSTELLO, JOHN J.
DEVLIN, JOHN H., JR.
DINEEN, JAMES H.
DONNA, JOHN J.
GOLDBERG, LEON
GOON, FRANK T. YU
GRAHAM, JOHN J.
GREELEY, JOHN H.
HORN, ASHER D.
JOHNSON, MARTHA B.
KEAY, FREEMAN A.
KENNEDY, JACQUELINE A.

KIRSHNER, SIDNEY L.
KRITZMAN, MORRIS
LANE, ARNOLD S.
McMACKIN, JOHN F. X.
MANNING, LEE
OBER, HARLAN F.
PARSONS, RUTH I.
PILCHER, COLE H.
PORTNOY, IRVING M.
ROBINSON, NATALIE P.
RYAN, KATHLEEN T.
SANDERSON, A. MAUD
SCHWEITZER, HOWARD
SKALIN, E. KARL
TINGUS, ANDREW G.
WARD, ROBERT G.
WILBUR, HARLAND A.
WILKINSON, S. FRANCES
YOUNG, DONALD J.

NORTHEASTERN UNIVERSITY

School of Law

47 MT. VERNON STREET, BOSTON, MASSACHUSETTS

APPLICATION FOR ADMISSION

Date.....19....

Name (*Print in full*).....

Address.....Telephone.....

Date of Birth.....Place of Birth.....

Citizen of.....Religion.....

Colleges or Universities attended.....

Length of attendance (specify years by date).....

Where situated.....If a graduate, what degree.....

Have you ever been dropped, suspended or expelled from any college or Law School?

.....If the answer is Yes, attach a full statement of facts.

If you have been a student in any other school of the Northeastern University system give name of school and years in which you were in attendance.

Name and address of employer.....

.....Telephone.....

Have you ever been complained of, indicted for or convicted of any violation of the law?

If so, attach a full statement of facts.

All statements made by me in this application are true and complete to the best of my knowledge and belief.

SIGNED.....

GENERAL INSTRUCTIONS

A fee of five dollars must accompany this application. Make checks, money orders or drafts payable to Northeastern University. (This fee is not refundable.)

Attach a transcript of your college record. (If transcript will not be issued to you, arrange to have it sent to this School direct.)

Attach to this application at least two letters addressed to the Dean by persons not members of applicant's family (preferably his employer and the Dean or some teacher of his school or college) testifying to applicant's intelligence, industry and good character.

If you have studied law at another school, whether or not you claim credit, also attach hereto an official certificate of work done there, showing subjects, hours and grades.

NORTHEASTERN UNIVERSITY

Coeducational

COLLEGE OF LIBERAL ARTS

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical and Chemical Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

COLLEGE OF BUSINESS ADMINISTRATION

Offers curricula in Accounting, Marketing and Advertising and Industrial Administration. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management and Engineering and Business. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Economics, English, History, Government, Psychology and Sociology. A special program preparing for admission to the School of Law is also available. The program is equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Special courses also available. Degree of Associate in Arts conferred.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the cooperative plan. After the freshman year students may alternate their periods of study with periods of work in the employ of business or industrial concerns at ten-week intervals. Under this plan they gain valuable experience and earn a large part of their college expenses.

In addition to the above schools the University has affiliated with it and conducts: the Lincoln Technical Institute, offering, through evening classes, courses of college grade in various fields of engineering leading to the degree of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY
BOSTON, MASSACHUSETTS

School of Law

Other Schools

47 MT. VERNON STREET

Telephone KENmore 5800

360 HUNTINGTON AVENUE



NORTHEASTERN UNIVERSITY

YEAR

BOSTON

1943-1944

SCHOOL OF BUSINESS

EVENING SESSIONS

Office Hours

TO JUNE 12, 1943

Daily (*except Saturdays and Sundays*), 8:45 A.M.—5:00 P.M.; 5:30 P.M.—9:15 P.M.

Saturdays, 8:45 A.M.—1:00 P.M.

JUNE 14, 1943 — AUGUST 14, 1943

Daily (*except Saturdays and Sundays*), 8:45 A.M.—5:00 P.M.

Saturdays, 9:00 A.M.—12:00 NOON.

AUGUST 16, 1943 — JUNE 16, 1944

Daily (*except Saturdays and Sundays*), 8:45 A.M.—5:00 P.M.; 5:30 P.M.—9:15 P.M.

Saturdays, 8:45 A.M.—12:00 NOON through September 4.

8:45 A.M.— 4:00 P.M. September 11, 18, and 25.

8:45 A.M.— 1:00 P.M. October 4—June 12.

Gifts and Bequests

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

Address Communications to

NORTHEASTERN UNIVERSITY
SCHOOL OF BUSINESS

360 HUNTINGTON AVENUE, BOSTON, MASS.

TELEPHONE: KENMORE 5800

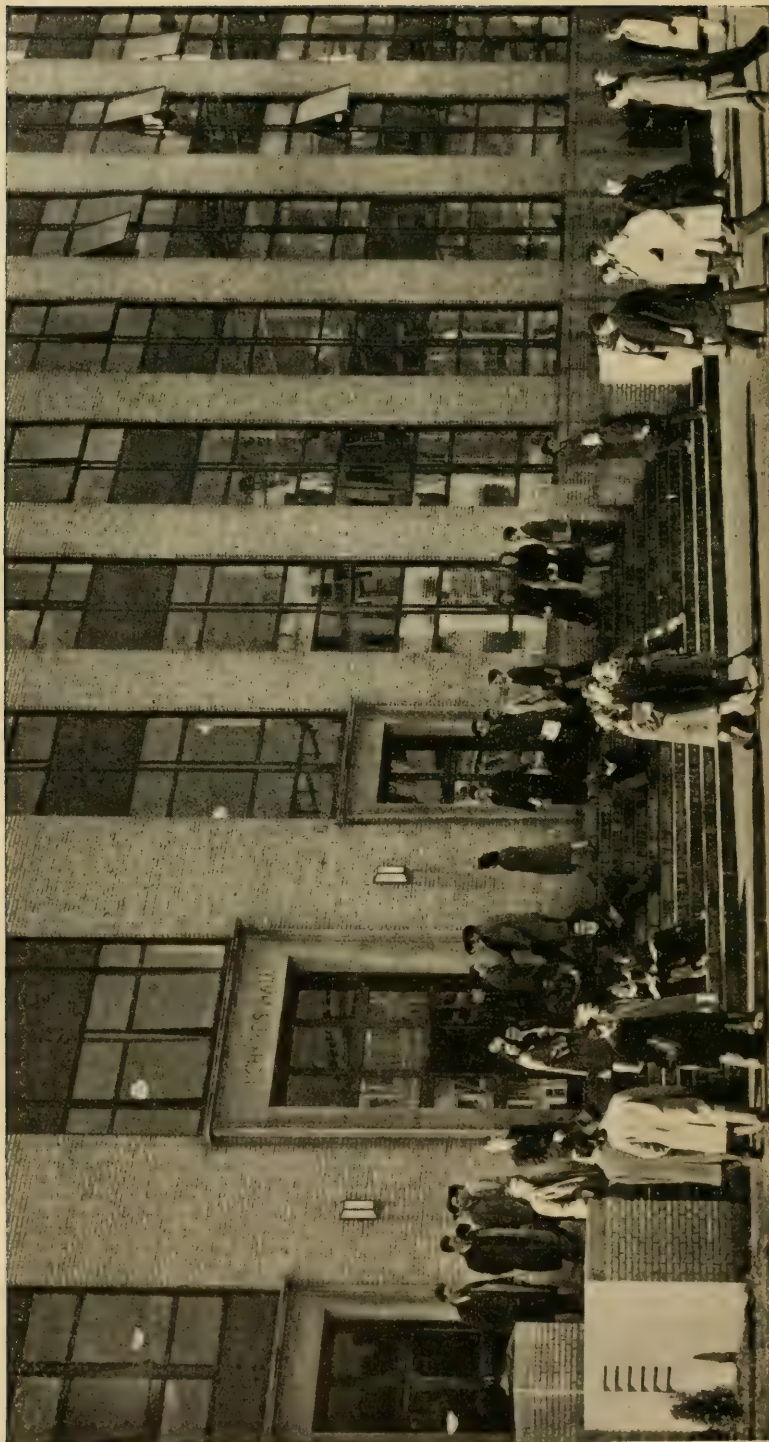
NORTHEASTERN UNIVERSITY
EVENING DIVISION
SCHOOL OF BUSINESS



36th Year
1943-1944

The University is located at
the entrance to the Huntington
Avenue subway within nine
minutes of Park Street and
easily accessible from all points.

A DISTINCTIVE SCHOOL OF BUSINESS
*providing opportunities for men and women to receive advanced training
in Business during convenient Evening Hours*



RICHARDS HALL

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Northeastern University

Administrative Organization

The Northeastern University Corporation

ROBERT GRAY DODGE
Chairman

FRANK LINCOLN RICHARDSON
Vice-Chairman

CARL STEPHENS ELL
President of the University

GALEN DAVID LIGHT
Secretary and Treasurer

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CHARLES FRANCIS ADAMS
WILMAN EDWARD ADAMS
ROGER AMORY
HENRY NATHANIEL ANDREWS
ROBERT BALDWIN
ARTHUR ATWOOD BALLANTINE
GEORGE LOUIS BARNES
THOMAS PRINCE BEAL
FARWELL GREGG BEMIS
SAMUEL BRUCE BLACK
HENRY GODDARD BRADLEE
GEORGE ARTHUR BURNHAM
GODFREY LOWELL CABOT
PAUL CODMAN CABOT
WINTHROP L. CARTER
WALTER CHANNING
WILLIAM CONVERSE CHICK
EVERETT AVERY CHURCHILL
PAUL FOSTER CLARK
SEARS B. CONDIT
ALBERT MORTON CREIGHTON
EDWARD DANA
EDWARD DANE
WILLIAM JAMES DAVIDSON
PAUL AUGUSTUS DRAPER
CHARLES FRANCIS EATON
WILLIAM PARTRIDGE ELLISON
JOSEPH BUELL ELY
JOHN WELLS FARLEY
FREDERIC HAROLD FAY
ALLAN FORBES
ERNEST BIGELOW FREEMAN
EDWARD J. FROST
FRANKLIN WILE GANSE
HARVEY DOW GIBSON
MERRILL GRISWOLD
HENRY INGRAHAM HARRIMAN
CHANDLER HOVEY
WESTON HOWLAND
HOWARD MUNSON HUBBARD
MAYNARD HUTCHINSON
ARTHUR STODDARD JOHNSON
HARRY HAMILTON KERR
FRANK HOWARD LAHEY

HALFDAN LEE
EDWARD ABBOTT MACMASTER
JOHN RUSSELL MACOMBER
GEORGE ARTHUR MALLION
JOSEPH PATRICK MANNING
ALBERT EDWARD MARSHALL
HAROLD FRANCIS MASON
JAMES FRANKLIN McELWAIN
HUGH DEAN McLELLAN
FRED LESTER MORGAN
IRVING EDWIN MOULTROP
CLARENCE LUCIAN NEWTON
SAMUEL NORWICH
OLAF OLSEN
AUGUSTIN HAMILTON PARKER, JR.
GEORGE EDWIN PIERCE
ROGER PIERCE
MATTHEW POROSKY
FREDERICK SANFORD PRATT
ROGER PRESTON
HARRY WENDELL PROUT
SIDNEY RABINOVITZ
STUART CRAIG RAND
WILLIAM MCNEAR RAND
JAMES LORIN RICHARDS
JOHN JAMES ROBINSON
CHARLES MILTON ROGERSON
ROBERT BILLINGS RUGG
LEVERETT SALTONSTALL
RUSSELL MARYLAND SANDERS
ANDREW SEBASTIAN SEILER
FRANK PALMER SPEARE
RUSSELL HENRY STAFFORD
FRANCIS ROBERT CARNEGIE STEELE
CHARLES STETSON
EARL PLACE STEVENSON
ROBERT TREAT PAINE STORER
FRANK HORACE STUART
EDWARD WATSON SUPPLE
RALPH EMERSON THOMPSON
JAMES VINCENT TONER
ELIOT WADSWORTH
EUSTIS WALCOTT
EDWIN SIBLEY WEBSTER
SINCLAIR WEEKS

Northeastern University

General University Committees

Executive Council

CARL STEPHENS ELL, *Chairman*
EVERETT AVERY CHURCHILL GALEN DAVID LIGHT

University Cabinet

CARL STEPHENS ELL, *Chairman*

ROBERT BRUCE	RUDOLF OSCAR OBERG
EVERETT AVERY CHURCHILL	EDWARD SNOW PARSONS
CHARLES WILLIAM HAVICE	JOHN BUTLER PUGSLEY
WILFRED STANLEY LAKE	CHARLES HENRY SAMPSON
JAMES WALLACE LEES	MILTON JOHN SCHLAGENHAUF
GALEN DAVID LIGHT	SYDNEY KENNETH SKOLFIELD
HAROLD WESLEY MELVIN	J. KENNETH STEVENSON
WINTHROP ELIOT NIGHTINGALE	WILLIAM CROMBIE WHITE

RUSSELL WHITNEY

Library Committee

EVERETT AVERY CHURCHILL, *Chairman*

ROBERT BRUCE	WILLIAM CROMBIE WHITE
WILFRED STANLEY LAKE	RUSSELL WHITNEY

MYRA WHITE

Divisional Committee

Springfield Division

Board of Governors

ROBERT RICHARDSON EMERSON, *Chairman*
STANLEY OSCAR SMITH, *Vice Chairman*

JOHN DOANE CHURCHILL	CHARLES ERNEST LEE
ROE SIDNEY CLARK	EARL HENRY PAINE
HARLEY BAKER GOODRICH	GEORGE WILLIAM RICE, JR.
BLAKE ALEXANDER HOOVER	HORACE JACOBS RICE

GEORGE EMERY WILLIAMSON

School of Business

Calendar

Class sessions which fall on holidays are made up at the end of the course or as announced.

1943

September	1- 8	Examinations for Removal of Conditions and Advanced Standing in Springfield.
September	6	Legal holiday (no classes).
September	7-10	Examinations for Removal of Conditions and Advanced Standing in Boston.
September	7-13	Upper classes begin in Springfield.* English 7, 8 Reports due.
September	13-17	Upper classes begin in Boston.* English 7, 8 Reports due.
September	20-24	Freshmen classes begin in Boston and Springfield.*
October	12	Legal holiday (no classes).
November	11	Legal holiday (no classes).
November	25	Thanksgiving Day — Legal holiday (no classes).
December	17	Last class session before Christmas recess in Springfield.
December	23	Last class session before Christmas recess in Boston.

1944

January	3	First class session after Christmas recess in Boston and Springfield.
January	17-28	Second semester classes begin in Boston and Springfield.
February	22	Legal holiday (no classes).
March	15	Last date for the submission of theses.
April	19	Legal holiday (no classes).
May	1	Last date for filing application for degrees and for the payment of the graduation fee.
May	8-26	Final examination period.
May	30	Legal holiday (no classes).
June	4	Baccalaureate Services at Springfield.
June	7	Commencement Exercises at Springfield. Baccalaureate Services at Boston (date to be announced). Commencement Exercises at Boston (date to be announced).

*Students must register before attending classes. See page 37 for late registration.

Northeastern University

General Statement

NORTHEASTERN UNIVERSITY is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) an Executive Committee which serves as an Ad Interim Committee between the regular meetings of the Board of Trustees and has general supervision of the financial and educational policies of the University; (b) a Committee on Buildings which has general supervision over the building needs of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Development Committee which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University, from the outset, had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

With respect to program, Northeastern has limited itself:

- To offering, in its several schools, basic curricula from which non-essentials have been eliminated;
- To effective teaching;
- To advising and guiding students;
- To giving students the chance to build well-rounded personalities through a balanced program of extra-curricular activities.

The Northeastern Plan of Education is especially designed for the student who must earn while he learns. In the main, it consists of two definite types of education:

- Co-operative Education by Day,
- Adult Education by Night.

The plan has been developed in such a way that experience in jobs with pay is utilized to help students of limited financial resources secure an education and at the same time gain the maximum educational benefit from their practical experience. So far as the New England States are concerned, Northeastern University is the only institution whose day colleges, other than the School of Law, are conducted under the Co-operative Plan.

The several schools and programs of the University are conducted either under the name "Northeastern University" or by its affiliated schools—the Lincoln Schools, and The Huntington Day School for Boys. The following is a brief outline of the principal types of educational opportunities offered.

In the field of Co-operative Education there are three day colleges—the College of Liberal Arts, the College of Engineering, and the College of Business Administration. The College of Liberal Arts offers majors in the usual fields of the arts and the sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. The College of Engineering, one of the largest engineering colleges in the United States, has curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. The College of Business Administration has curricula in Accounting, Marketing and Advertising, and Industrial Administration. The College of Engineering and the College of Business Administration confer the degree of Bachelor of Science with specification indicating the field of specialization. The Co-operative Plan, under which all of these day colleges operate, enables the student to alternate regular periods of classroom instruction with supervised employment in an industrial or commercial position, thus combining theory and practice in an exceedingly effective manner. Apart from the educational advantages of the Co-operative Plan is the opportunity for self-support while the student is pursuing his studies at Northeastern University. During the co-operative periods, students not only gain experience but are also paid for their services. Approximately three hundred business and industrial concerns co-operate with Northeastern University in making this program effective.

The School of Law conducts both a day and an evening undergraduate program which prepares for admission to the bar and for the practice of the law and leads to the degree of Bachelor of Laws.

The Adult Education Program has been developed in the evening work of the School of Law as indicated above, in the School of Business, and in the evening courses of the College of Liberal Arts. The School of Business has curricula in Management, Accounting, and Engineering and Business. This School awards the Bachelor of Business Administration degree, with specification. The University also operates a division of the School of Business in Springfield. The College of Liberal Arts offers certain of its courses during evening hours constituting a program, three years in length, equivalent in hours to one-half the requirements for the A.B. or S.B. degree, and providing a general education and preparation for admission to the School of Law. The title of Associate in Arts is conferred upon those who complete this program.

The Adult Education Program has also been developed through the Lincoln Schools, which are affiliated with and conducted by Northeastern University. The classes in these schools are held at convenient evening hours. The Lincoln Technical Institute offers curricula upon a college level in various phases of engineering leading to the title of Associate in Engineering; whereas the Lincoln Preparatory School, accredited by the New England College Admissions Board, prepares students for admission to college and offers other standard high school programs.

The Huntington Day School for Boys, also affiliated with and conducted by Northeastern University, is the outgrowth of a demand in the city of

Boston for an urban preparatory school with high educational standards which would furnish thorough preparation for admission to the leading colleges and universities. While easily accessible to the various sections of Boston and to the suburbs, it has the facilities of a country day school and offers a country day school program. This School is one of the leading preparatory schools of the country.

Location of University Buildings

Northeastern University is located in Boston, a city which is rich in educational and cultural opportunities. The University center is on Huntington Avenue just beyond Massachusetts Avenue and opposite the Boston Opera House. Here on an eight acre campus are located the educational buildings of the University except that of the School of Law. The classes of the Evening School of Business are all held at the University center on Huntington Avenue.

Richards Hall

Richards Hall, a four-story building at 360 Huntington Avenue, contains over one hundred thousand square feet of floor space devoted to administrative and instructional purposes. On the first floor are the general administrative offices of the University. The University bookstore, the "Husky Hut" and the student checkroom are located on the ground floor. On the various floors are three large lecture halls and numerous classrooms and laboratories. The offices of the Evening Division are located on the first floor.

New Building

This building contains forty-two thousand square feet of floor space. Here are located the Chemical Engineering and Biological laboratories, a large commons room open to day and evening students, and eighteen classrooms and lecture halls.

East Building

This building contains the University library, classrooms, and certain laboratories.

South Building

The South Building of the University contains certain laboratories, a large lecture hall, and several classrooms.

Beacon Hill Building

The Beacon Hill Building, now occupied exclusively by the School of Law, is located at 47 Mt. Vernon Street, within sight of the State House and contains administrative offices, a library, classrooms, student lounges, and other facilities.

Transportation

The University center is easily reached from the various railroad stations and from all points on the Boston Elevated System by the new rapid transit Huntington Avenue subway. Ample parking space is available in the rear of Richards Hall.

Springfield Division

Northeastern University, Springfield Division, is located at 114 Chestnut Street, two streets east of Main on Chestnut, corner of Hillman — a three-minute walk from Main via Hillman. It is reached from the Union Station by a five-minute walk south along Dwight to Hillman to Chestnut; and a three-minute walk north along Chestnut from the Public Library on State Street.



A Section of the University Library

School of Business

The Background of an Institution

THIRTY-SIX YEARS ago, in March of 1907, the first undergraduate evening school of business in New England was organized. This was the beginning of Northeastern University School of Business, a pioneer endeavor to bridge an existing gap in business and professional education. Four years later, the School was authorized by the Massachusetts Legislature to grant university degrees to its graduates.

Administrative Policy

The School of Business was founded to serve those who have only evening hours free for study — a special field, limited to the education of the person who has permanently left day school and gone to work. The Northeastern University evening student is an adult, usually more mature than the student of a day school. He is in direct touch with business and is expected to take an active part in his own supervised training. The constant effort of the administrative and teaching staff is toward more effective means of suiting their educational service to the individual evening student.

Purpose

Now, just as at the start, the school seeks first to determine what business needs in its personnel, and then to supply properly trained men and women who can fulfill those needs.

The training of a student at Northeastern has always been conducted so that a graduate receives not only a B.B.A. degree, but an immediately applicable vocational training equipping him to fill a better position in some one business activity. For his future, he has the advantage of a thorough background of business methods and an appreciation of the problems of management, which, if properly used, may lead to advancement and executive responsibilities.

Staff of Instruction

The teaching staff of the School in Boston and Springfield is recruited from business and professional leaders of New England business. The instructors are college-trained men who have proved their ability in their various fields of specialization. They are selected on the basis of their ability to convey knowledge to others in an interesting, inspiring, and effective manner. They are also chosen for the breadth of their training and experience.

Success of the Alumni

The best indication of the cumulative rewards to be won by pursuing a systematic program of study in spare evening hours is to be found in the records of Northeastern School of Business Alumni.

A recent study covering all Boston graduates conclusively shows that better positions and increased incomes are directly traceable to the evening hours spent in preparation at Northeastern.

A portion of this study is the comparison of positions held by the alumni when they entered the School as freshmen with the positions they held at the time of the study.

ALUMNI POSITIONS

	Upon Entrance %	Now %
Presidents and Other Corporation Officers	0.0	3.8
Owners of Business	1.0	13.1
Treasurers and Comptrollers	.3	7.7
Accountants	7.0	16.9
Office Managers	1.6	7.4
Department Managers	2.9	11.5
Salesmen	3.8	3.8
Educators	8.6	7.0
Government Employees	2.6	7.7
Bookkeepers	18.8	1.3
Clerks	34.2	6.4
Factory Workers	5.8	2.2
Unemployed	2.9	1.9
Miscellaneous	10.5	9.3

This pronounced trend to better and more responsible positions is further substantiated by a study of the income of the same alumni group over the same period.

It was found that the alumni who had been out of the School of Business not more than ten years, had increased their income an aggregate of 73.2%. For those who graduated more than ten years ago, this increase amounts to 223.6%. Another study of the income of students still in school shows that the average School of Business student begins his advancement in business and in income even while he is still at his training. On the average, the increase in income during the period of attendance more than covers tuition charges.

The Student Body

The character of a student body determines the standards which a school can maintain. Nothing is more essential to the success of an educational institution than a careful selection of incoming students. This principle applies just as readily to an evening school as to a day school. Standards are invariably adjusted to the average intelligence of the students. For this reason, Northeastern University School of Business maintains standards of admission which result in a student body capable of pursuing work of standard college grade during evening hours.

The student body consists of 689 men and women of widely varied ages and occupations. The youngest student is 16 years of age and the oldest 17 years. The average age is 23 years.

About one-sixth of the students are married men who have realized that if they are to increase their earning power they must fit themselves for advancement. That the training offered by the School has enabled the students to improve their earning capacities and enlarge their responsibilities is conclusively proved by a study which showed that students in the School substantially increased their incomes in the six year period between entering the School and graduation.

Placement Service

For Graduates

While the School cannot guarantee positions to its graduates, the number of requests for men usually exceeds the number available in the graduating class of any given year. The policy of the School is to find the best equipped and qualified men and women among its graduates for the positions which the School is called upon to fill.

The School in recommending a graduate for a position furnishes the prospective employer with the facts as to the graduate's ability, character, attitudes, habits, and other qualifications for the position as revealed by the School records. In the last analysis, however, placement in a position depends quite largely upon the graduate's ability to sell his services to the prospective employer. Most employers prefer to consider two or more candidates for a position and generally request the School to suggest more than one person. Many manufacturing and commercial firms throughout New England call upon this School to assist them in filling important executive and managerial positions.

No charge is made for placement service.

For Students

Many requests from employers are received by the School, during normal times, for young men and women of potential ability to fill important clerical and junior executive positions. It is the policy of the School to serve the students whenever possible by placing them in those positions which promise attractive opportunities for development and advancement. The School, however, cannot guarantee to place its students, but it does endeavor to keep in close touch with those who desire placement service and to assist them in obtaining satisfactory advancements in positions and income. No charge is made for placement service. Those needing this assistance should file an application at the School Office.



School of Business

Administrative Organization

General Officers of Administration

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D., *President of the University*
FRANK PALMER SPEARE, M.H., LL.D., *President Emeritus of the University*
EVERETT AVERY CHURCHILL, A.B., Ed.D., *Vice-President of the University*
GALEN DAVID LIGHT, A.B., *Secretary-Treasurer of the University*
RUSSELL WHITNEY, B.S., LL.B., *Dean*

Local Officers of Administration

BOSTON

RUSSELL WHITNEY, B.S., LL.B., *Dean*
J. KENNETH STEVENSON, B.C.S., *Assistant to the Vice-President*
MILTON JOHN SCHLAGENHAUF, A.B., B.D., M.A., *Director of Admissions*
FRANK GIVEN AVERILL, B.A., *Director of the Development Program*
ELLIS MERTON PURINTON, B.B.A., *Director Vocational Guidance and Placement*
MYRA WHITE, *Librarian*
MARY B. FOOR, *Manager of the Bookstore*

SPRINGFIELD DIVISION

JOHN DOANE CHURCHILL, A.B., A.M., *Director*
EARL HENRY PAINE, B.C.S., *Treasurer*
ERROL LEON BUKER, B.S., *Registrar*
GUY DOLPHUS MILLER, A.B., Ed.M., C.P.A., *Associate Dean*

Secretarial and Office Staff

BOSTON

HELEN MARGARET STODDARD, *Registrar and Recorder*
BARBARA RUTH TONDER, *Secretary to the Dean*
ELIN VICTORIA PETERSON, *Secretary to the Vice-President*
MABEL ELLEN BEAN, *Secretary to the Assistant to the Vice-President*
ALICE RIAMA CRAWFORD, A.B., *Assistant Librarian*
DOROTHY SHERWOOD, B.S. in Education, *Assistant Librarian*
BARBARA TISDALE, A.B., B.S., *Assistant Librarian*
GRACE HEWITT WATKINS, B.S., *Assistant Librarian*
FRANCES GLASGOW BISHOP, *Cashier, Central Offices*
VIRGINIA CUSHING DARLING, *Secretary and Purchasing Clerk, Central Offices*

THELMA GERTRUDE DUNN, *Bookkeeper, Central Offices*
DAISY MILNE EVERETT, *Assistant Treasurer*
ELIZABETH HARRIETT HOWARD, *Statistical Clerk, Central Offices*
ELLEN WHITEHOUSE PARKINSON, *Bookkeeper, Central Offices*
PRISCILLA EMILY PATCH, *Information, Central Offices*
MARJORIE GRAFFTE PROUT, *Secretary to the President*
JULIA HARRIET MASLEN, *Secretary to the President*
ALYCE ANN NICHOLS, *Bookkeeper, Central Offices*

SPRINGFIELD DIVISION

MARGARET TARPINIAN, *Assistant to the Registrar*
MILDRED MAE LEZINSKI, B.B.A., *Librarian*
MARY ELIZABETH HURLEY, LL.B., *Assistant Librarian*

School of Business

* Staff of Instruction

Boston

PETER ARAKELIAN, B.S., M.A., Tufts College, Yale University
Psychology for Business and Industry
Personnel Director, Raytheon Production Corporation

LEO J. BARRY, A.B., Bates College, Harvard University, Boston University
Business English
Teacher, Newton High School

FREDERICK MORSE BASSETT, B.C.S., Northeastern University; C.P.A.
Constructive Accounting
Accountant, Stewart, Watts and Bollong

ELLIOT SHEFFELD BOARDMAN, Bowdoin College; M.B.A., Harvard University
Business Administration Seminar, Business Planning and Research
Manager, Industrial Statistics Division, Federal Reserve Bank of Boston

CHARLES ALBERT CEDERBERG, Boston University
Introductory Accounting, Intermediate Accounting
Instructor in Bookkeeping, Boston Clerical School

ALFRED D'ALESSANDRO, B.C.S., LL.B., Northeastern University; M.B.A., Boston University;
Harvard University; C.P.A.
C.P.A. Problems
Professor of Accounting, Northeastern University

JOHN ENNEGUESS, B.C.S., B.B.A., Northeastern University; Harvard University
Accounting Problems
Chairman, Department of Accounting, Worcester Junior College; Income Tax Specialist,
Harry W. Wallis

LEO THOMAS FOSTER, A.B., A.M., Holy Cross College; Harvard University; Boston University
Income Tax Procedure
Head of Commercial Department, Jeremiah E. Burke High School

RALPH MYER GOLDSTEIN, S.B., Tufts College; LL.B., Harvard University
Labor Relations
Attorney at Law

HOWARD EATON GORTON, B.S., Hobart College; M.B.A., Harvard University
Marketing
Merchandise Manager, Dennison Manufacturing Company

HOWARD FRANCIS GREENE, Northwestern University; C.P.A.
Advanced Accounting Problems
Accountant, Swantee, Darmody and Company

J. KEENE HORNER, B.A., University of Oklahoma; M.B.A., Harvard University
Public Speaking; Business Reports and Conferences; Counsellor, Business Readings and Theses
Director, Division of Finance, Babson Institute

ROGER MAYHEW JENNINGS, B.B.A., Boston University; M.B.A., Harvard University
Retail Store Management and Department Store Administration

* The Faculty for the year 1943-44 is published during the summer.

ROGER JOHNSON, B.S., Bowdoin College; M.B.A., Harvard University
Business Statistics and Forecasting, Government Controls in Business
 Regional Business Consultant, U. S. Department of Commerce

HARRY OLINS, A.B., LL.B., Harvard University
Legal Aspects of Business, Trade Regulation
 Attorney at Law

ANDREW PETERSEN, B.B.A., M.B.A., Boston University; C.P.A.
Accounting Aids to Management
 Charles F. Rittenhouse and Company

WYMAN S. RANDALL, B.B.A., Boston University
Purchasing
 Purchasing Agent, Rust Craft Publishers, Inc.

FLOYD RINKER, A.B., Dickinson College; M.A., Boston University; Harvard University
Business English
 Head of Department of English, Newton High School

FREDERICK L. ROBINSON, B.S., University of New Hampshire
Principles of Selling, Sales Management
 Staff Assistant, Merchandise Development Division, Dennison Manufacturing Company

ROBERT WILLIAM SHERBURNE, B.B.A., Northeastern University; Boston University
Intermediate Accounting
 Director of Accounting, Burdett College.

IRWIN SPEAR, Ph.B., University of Vermont
Principles of Advertising; Retail Store Advertising
 Advertising Service

BENJAMIN F. STACEY, A.B., Dartmouth College; M.C.S., The Amos Tuck School
Business Economics
 Assistant Recruiting Specialist, U. S. Civil Service Commission

HARRY WILBUR THOMPSON
Credits and Collections
 Credit Manager, General Sea Foods Corporation

MARK WAINER, LL.B., LL.M., Boston University
Taxes and Taxable Interests
 Attorney at Law

Springfield Division

INGHAM CHAMBERLAIN BAKER, A.B., Dartmouth College; The Amos Tuck School
Marketing
 Director and Assistant Treasurer, G. & C. Merriam Company

ERNEST ADOLPH BERG, B.C.S., LL.B., Northeastern University; C.P.A.
Advanced Accounting Problems
 Partner, Hitchcock & Co., Accountants; Attorney at Law

REGINALD NELSON BLOMFIELD, A.B., Williams College
Advanced Algebra; Plane Trigonometry
 Personnel Department, Massachusetts Mutual Life Insurance Company

DAVID HOLBROOK BROWN, A.B., Middlebury College; LL.B., Boston University; A.M.,
 Trinity College
Business Economics; Financial Organization; Economic Development of the U. S.
 Instructor, Classical High School

CLARENCE IRVING CHATTO, A.B., Bates College; A.M., Harvard University
Advanced English
Instructor, High School of Commerce

CARL ODLIN CHAUNCEY, LL.B., Northeastern University
Legal Aspects of Business
Member of Legal Staff, Farm Credit Administration of Springfield; Attorney at Law

CLIFFORD SCHOLES CODY, B.S., Iowa State College
Heat Engineering
Member of Engineering Staff, Westinghouse Electric and Manufacturing Company

ALEXANDER DUNCAN DAVIS, B.T.E., Lowell Textile Institute
Engineering Drawing
Instructor, Technical High School

HAROLD JOSEPH FARRELL, B.B.A., Northeastern University
Accounting Problems
Public Accountant

LEONARD COLERICK FLOWERS, B.S., M.S., Carnegie Institute of Technology
Physics
Member of Engineering Staff, Westinghouse Electric and Manufacturing Company

NELSON HAYWARD FOLEY, Boston University
Industrial Management Problems and Policies
Member of Staff, Scovell, Wellington & Co.

MOTT ABRAM GARLOCK, B.S., Dartmouth College; M.B.A., Harvard University
Business and Industrial Management
Security Analyst, Massachusetts Mutual Life Insurance Company

EDWARD PHELPS GRACE, B.C.S., Northeastern University; C.P.A.
Accounting Aids to Management
Assistant General Manager, Springfield Merchants, Inc.

CLARENCE MORTIMER HALL, B.S., M.S., Worcester Polytechnic Institute
Electricity
Instructor, Classical High School

WILLIAM OTTO HENSCHKE, B.S., Cooper Union Institute of Technology
Advanced Engineering Drawing
Member of Engineering Staff, American Bosch Corporation

FRANK YAEGER HESS, S.B., Harvard College
Chemistry
Instructor, Classical High School

RICHARD EDWIN HOLMES, B.S., Carnegie Institute of Technology; M.S., University of Pittsburgh
Heat Engineering
Engineering Staff Member, Westinghouse Electric and Manufacturing Company

GEORGE WRIGHT HOWE, A.B., M.B.A., Harvard University
Business Administration Seminar; Business Planning and Research
Treasurer, Century Manufacturing Co.

FRED WOODING HUTCHINSON, B.S., Wesleyan University; Boston University
Analytic Geometry; Calculus; Counselor to Engineering and Business Students
Instructor, Technical High School

CYRUS WALTER JONES, S.B., Harvard College
Business English
Instructor, Technical High School

- HENRY HARTWELL KENNEY, New York University, Northeastern University
Constructive Accounting, Auditing
 Assistant Trust Officer, Union Trust Company
- HARRY HARRIS KING, B.S., Worcester Polytechnic Institute; C.P.A.
Cost Accounting
 Public Accountant. On leave of absence
- GUSTAV HENRY KOCH, M.E., Rensselaer Polytechnic Institute
Strength of Materials
 Engineering Staff, Westinghouse Electric and Manufacturing Company
- GUY DOLPHUS MILLER, A.B., Ohio University; University of Wisconsin School of Law;
 Harvard Graduate School of Business Administration; Ed.M., Harvard University;
 C.P.A.
Business Reports and Conferences; Counselor to Students including Theses and Business Readings
 Instructor, High School of Commerce
- JOHN HAYNES MILLER, A.B., Washington and Jefferson College
Business Statistics and Forecasting
 Vice President and Actuary, Monarch Life Insurance Company
- FREDERICK CHAPIN OBER, A.B., Harvard University
Credits and Collections
 Assistant Treasurer, Springfield Five Cent Savings Bank
- HALDIMAND SUMNER PUTNAM, JR., B.S., Syracuse University
Intermediate Accounting
 Accountant, Scovell, Wellington and Company
- HORACE JACOBS RICE, B.S., Wesleyan University; LL.B., Harvard University
Government Controls in Business
 Attorney at Law
- CARROLL WARD ROBINSON, A.B., Clark College; Ed.M., Harvard University
Public Speaking
 Principal, Myrtle Street Junior High School
- JAMES THOBURN SMITH, B.C.S., Northeastern University
Income Tax Procedure
 Assistant Trust Officer, Union Trust Company of Springfield
- LELAND WILLIAM SMITH, A.B., Harvard College; A.M., Columbia University
Advanced Algebra; Trigonometry
 Instructor, Classical High School and Springfield Junior College
- ELO CARL TANNER, B.M.E., University of Minnesota; University of Pittsburgh
Design
 Refrigeration Development and Design Engineer, Westinghouse Electric and Manufacturing Company
- HAMILTON TORREY, B.S., University of Pennsylvania
Business English
 Assistant to the Regional Representative of Engineering, Science, Management, War
 Training for New England
- GILBERT CREIGHTON WALKER, A.B., Ed.M., Harvard University; Northeastern University
Introductory Accounting
 Instructor, High School of Commerce
- ELIOT LELAND WIGHT, B.A., Yale College, University of Colorado, Graduate School
Advertising Principles; Advertising Campaigns; Principles of Selling; Sales Management
 Advertising Manager, United States Envelope Company
- PAUL ALMY WILKS, A.B., Harvard College
Business English
 Chief Accountant, Strathmore Paper Company, on leave of absence for military service
 as Major, United States Ordnance Department, assigned to Hartford Ordnance District

School of Business

Programs of Instruction

THE SCHOOL provides the following major programs of instruction for undergraduate students:

Accounting

A four- and a six-year program in Accounting. The four-year program leads to the title of Associate in Accounting and the six-year program to the degree of Bachelor of Business Administration in Accounting. (See page 20.)

Management

A four- and a six-year program in Management. The four-year program leads to the title of Associate in Business Administration and the six-year program to the degree of Bachelor of Business Administration in Management. (See page 22.)

Engineering and Business

A six-year program combining the study of engineering and business, leading to the degree of Bachelor of Business Administration in Engineering and Business. This program is offered in Boston and Springfield. (See page 24.)

Special Programs

Where the individual needs of a student necessitate, the School will provide special one-year, two-year, or longer programs to meet those needs. If, for good reasons, a student wishes to vary a regular program, he may do so upon securing approval from the Dean. (See page 25.)

Single or Unit Courses

For those who may wish to pursue one or more related or unrelated subjects instead of a title or degree program, opportunity is provided for enrolling in single or unit subjects. (See page 25.)

The Accounting Programs

Students of accounting in the School of Business may follow programs of training in this specialized subject which prepare them to take the examination for Certified Public Accountant (C.P.A.) or to carry on work of major responsibility in commercial accounting with private or public business firms.

Thoroughness of instruction is all-important. The trained accountant must be able to adapt himself quickly to the rapidly changing conditions of modern business. He should be ready to assume executive responsibility outside the field of accounting. This involves, of course, a background of understanding of various functions of business quite apart from the specialized accounting field. The shorter accounting program includes prescribed subjects for the title of Associate in Accounting and adequate preparation for the C.P.A. examination.

Upon completion of the four years of prescribed subjects for the title of Associate in Accounting, students may take two years of additional study required for the degree of Bachelor of Business Administration. These two additional years are greatly to the advantage of the student, since they give an opportunity to study managerial and administrative subjects which fit him to assume responsibility outside of the accounting field, and give him the basic understanding of business at large which is of vital importance to accountants who hope to make real progress.

Opportunity in the Accounting Profession

Taxation, legal requirements governing qualifications for listing in the stock market, corporation laws governing the preparation of financial reports, the needs of government, and many other developments in the conduct of business have broadened the scope of accounting to such a degree that in normal times the supply of trained accountants is not adequate to meet the demand. Moreover, a knowledge of accounting is universally regarded as essential in all phases of business management. There is a large field of public accounting which is being developed, and with the increased emphasis which financial institutions are placing upon accounting, the need for college-trained Certified Public Accountants is increasing every year.

Opportunities in the field of accounting are many. Financial returns compare favorably with those of other professions such as law, medicine, and engineering.

The normal development of an accountant from the time he gets his degree is as follows:

First — as a junior assistant, he works on routine accounting procedure which is highly essential as a part of his experience. The average man spends about two years in this position.

Second — as a senior assistant he accepts some responsibilities, and performs somewhat of a professional service.

Third — he now assumes full responsibilities for important assignments and becomes a senior accountant.

Fourth — the peak of success for accountants is firm membership. The remuneration in the field of public accounting varies, of course, with the grade

of position held. As a firm member, the usual earnings range from \$4,000 to \$25,000 a year, and frequently are even higher.

While the remuneration in the field of public accounting for properly trained men is attractive, the field of commercial and private accounting offers even more attractive inducement. The latest census figures show that there are 191,571 persons engaged as accountants and auditors in the United States. From trained accountants are selected many of the business and industrial executives, including office managers, comptrollers, treasurers, and other officers of business concerns. Salaries of treasurers and comptrollers vary from \$4,000 to \$15,000; office managers from \$3,000 to \$6,000; chief accountants from \$2,500 to \$5,000. Many senior accountants have advanced into responsible executive positions paying \$10,000 and more.

Qualifications for Success in Accounting

There is no easy or royal road to success in accounting. The technique can be mastered only through continuous application, comparable to the preparatory work of a doctor, lawyer, or engineer. Mathematical accuracy is extremely important. The student must learn to analyze logically and soundly; to visualize and present situations as they develop. Each step, however painstaking and laborious, must be mastered by one who hopes to succeed either as a public or private accountant. Above all, the higher standards of honesty must be maintained, and the accountant's personal and ethical conduct must be above suspicion. The successful accountant is able to make a good appearance, to present an agreeable personality, and to express his ideas clearly in good English. Northeastern University School of Business tries to train its graduates so that they possess all these qualifications. The School encourages only men with the proper personal, mental, and educational qualifications to enter the profession.

Requirements for Title of Associate in Accounting

(Four Years of Study Required)

Course Numbers*	Subjects	Semester Hours
A 1-2	Introductory Accounting	5
A 3-4	Intermediate Accounting	5
A 7-8	Accounting Problems	5
A 9-10	Cost Accounting	5
A 11	Auditing	2½
A 13-14	Income Tax Procedure	5
A 15	Constructive Accounting	2½
A 17-18	Advanced Accounting Problems	5
A 19-20	C.P.A. Problems	5
E 1-2	Business English	5
Ec 1-2	Business Economics	5
Ec 3-4	Financial Organization	5
L 1-2	Legal Aspects of Business (C.P.A. Law)	5
Total Semester Hours Required for Title		60

* See notes at bottom of page 25.

Requirements for B.B.A. Degree in Accounting

(Six Years of Study Required)

Course Numbers*	Subjects	Semester Hours
A 1-2	Introductory Accounting	5
A 3-4	Intermediate Accounting	5
A 7-8	Accounting Problems	5
A 9-10	Cost Accounting	5
A 11	Auditing	2½
A 13-14	Income Tax Procedure	5
A 15	Constructive Accounting	2½
A 17-18	Advanced Accounting Problems	5
A 19-20	C.P.A. Problems	5
E 1-2	Business English	5
E 5	Public Speaking	2½
E 6	Business Reports and Conferences	2½
E 7, 8	Business Readings or T 3-4 Thesis	5
Ec 1-2	Business Economics	5
Ec 3-4	Financial Organization	5
L 1-2	Legal Aspects of Business	5
Ec 7-8	Business Statistics and Forecasting	5
M 7-8	Credits and Collections	5
M 11-12	Government Controls in Business	5
	Occupational Experience	30
	Electives (To be selected subject to approval)	10
	Total Semester Hours Required for Degree	125

The normal period of attendance for the Associate in Accounting Program is four years, thirty-three weeks each year, three evenings a week, two hours each evening; for the B.B.A. Degree Program, six years, thirty-three weeks each year, three evenings a week, two hours each evening, except for those who enter with advanced standing credit. Students who wish to attend less than three evenings a week may do so, extending the time required to complete their programs.

The Management Programs

"The field of business within the last twenty years has so widened and become so much more complex that the successful business man finds no limit set to his vision. As an executive he must possess the faculty of interpreting current events, the ability of analyzing situations, and a thorough knowledge of the principles underlying all successful business practice."¹

The complexity of modern business makes it exceedingly difficult for those who are dependent upon their own experience to develop those abilities and obtain the knowledge so necessary for the desired advancement in business. A broad perspective of business organization and operation develops viewpoints and habits that promote clear thinking and sound judgments in business decisions. This broad perspective demands not mere facts but also that executive power which can initiate plans and put them into effective opera-

* See notes at bottom of page 25.

¹ Statement by Dr. Jeremiah W. Jenks, late President, Alexander Hamilton Institute.

tion. This power is seldom acquired from experience in details but comes from a thorough knowledge of business principles and of the proper application of those principles to the solution of problems. Executive and managerial leadership demands that power; the School of Business through its Management Programs proposes to develop it.

A recent extensive study¹ of occupational opportunities shows that most college men who enter work in distribution, industry, transportation, and banking become involved sooner or later in some function of operating management where they become responsible for the direction of human effort within their organization.

Management

A four-year title and a six-year degree program are offered. Not only are the usual business subjects included, but also adequate courses in the more technical fields of production and scientific management. Careful study is made of the fundamental manufacturing processes, factory organization, product design, methods of production and production control, time and motion study, and related topics. This program offers excellent training for managerial responsibility in industrial and commercial enterprises where a technical knowledge of management problems combined with a business background is needed.

Requirements for the B.B.A. Degree in Management and the Title of Associate in Business Administration

The courses listed immediately below meet in full the requirements for the title of Associate in Business Administration and in part the requirements for the degree of Bachelor of Business Administration.

Course Numbers*	Subjects	Semester Hours
A 5-6	Accounting Aids to Management**	5
D 1-2	Marketing	5
D 3	Principles of Selling	2½
D 4	Sales Management	2½
E 1-2	Business English	5
E 5	Public Speaking	2½
E 6	Business Reports and Conferences	2½
Ec 1-2	Business Economics	5
Ec 3-4	Financial Organization	5
L 1-2	Legal Aspects of Business	5
M 1-2	Business and Industrial Management	5
M 3	Principles of Production	2½
M 4	Scientific Management	2½
M 5	Psychology for Business and Industry	2½
M 6	Purchasing	2½
M 9-10	Industrial Management Problems and Policies	5
	Total Semester Hours	60

*, ** See notes at bottom of page 25.

¹ Dewhurst & Bossard, University Education for Business, Univ. of Pa. Press.

The following requirements in addition to those listed previously must be met by all candidates for the degree of Bachelor of Business Administration.

Course Numbers*	Subjects	Semester Hours
E 7, 8	Business Readings or T 3-4, Thesis	5
Ec 7-8	Business Statistics and Forecasting	5
M 7-8	Credits and Collections	5
M 11-12	Government Controls in Business	5
M 17-18	Business Planning and Research	5
M 19-20	Business Administration Seminar	5
	Occupational Experience	30
	Electives (To be selected subject to approval)	5
	Total Semester Hours Required for Degree	125

The normal period of attendance for the Associate in Business Administration program is four years, thirty-three weeks each year, three evenings a week, two hours each evening and for the B.B.A. degree programs, six years, thirty-three weeks each year, three evenings a week, two hours each evening, except for those who enter with advanced standing credit. Students who wish to attend less than three evenings a week may do so, extending the time required to complete their programs.

Engineering and Business Program

(Offered in Boston and Springfield)

The Engineering and Business curriculum offers basic training by combining fundamental engineering and business courses in a six-year degree program. It provides reliable training for those now engaged in or who plan to enter positions of managerial responsibility in industrial or commercial enterprises where a scientific or engineering background is required.

Many technically trained men find it impossible to assume greater managerial responsibility because they do not have a knowledge of fundamental business principles so essential in many of the better positions in industry. On the other hand, many business trained men are employed in industrial plants where a scientific background is most desirable if not necessary for advancement. This program has been developed to serve both groups.

In Boston, the Engineering courses in this program are given under the auspices of an affiliated school of Northeastern University, the Lincoln Technical Institute, which offers several four-year curricula in Engineering leading to the title of Associate in Engineering. These curricula permit specialization in Chemistry, Civil and Structural Engineering, Electrical Engineering, and Mechanical Engineering with an Aeronautical option. The business courses are conducted by the School of Business which awards the degree of Bachelor of Business Administration in Engineering and Management.

The required business courses are largely in the field of industrial management and are designed to supplement the engineering work of the student. A careful study is made of the fundamental manufacturing processes, factory organization, production design, methods of production and production control, and time and motion study.

*See notes at bottom of page 25.

Students pursuing a program of engineering and business subjects ordinarily complete the work required for the title of Associate in Engineering before starting business study. The following minimum credits and courses are required to meet degree requirements.

*Requirements for the Degree of Bachelor of Business Administration
in Engineering and Management*

Course Numbers*	Subjects	Semester Hours
	Lincoln Technical Institute courses	60
A 5-6	Accounting Aids to Management	5
E 6	Business Reports and Conferences	2½
E 7, 8	Business Readings or T 3-4, Thesis	5
Ec 1-2	Business Economics	5
M 1-2	Business and Industrial Management	5
M 3	Principles of Production	2½
M 4	Scientific Management	2½
M 6	Purchasing	2½
M 9-10	Industrial Management Problems and Policies	5
	Occupational Experience	30
	Total Semester Hours Required for Degree	125

In Springfield a more general program with a mechanical engineering major is offered. The degree granted is the Bachelor of Business Administration in Engineering and Business.

For more detailed information, consult the special booklets issued by the Lincoln Technical Institute in Boston or by the Springfield Division.

Special Programs and Single Courses

Special one-year, two-year, or longer programs may be arranged to meet the needs of any student who does not find in the regular programs offered by the School the type of training desired.

Such programs must be approved by the Dean and are made up only from courses offered in the Evening Division of the University.

Any course may be taken singly or in combination by those who have the necessary preliminary training to pursue with profit the course or courses selected.

Students should consult the schedules of courses offered in Boston and in Springfield for a list of available courses. Full credit may be allowed for any of these courses, if the student taking a special program desires to become a candidate for a degree or title, provided the courses he has pursued are a part of the degree or title program chosen.

* A double number, as M 1-2 or A 7-8, indicates a full-year course covering both the first and second semesters. A single course number, as A 11, indicates a half-year course covering only one semester. The letters indicate the classification of the course as: A, Accounting; D, Distribution; Ec, Economics; E, English; L, Law; M, Management.

** Students in the Management Program desiring more accounting than the single course of Accounting Aids to Management may elect both Introductory and Intermediate Accounting in lieu of Accounting Aids to Management. If Accounting Aids to Management is taken, Introductory and Intermediate Accounting cannot also be elected for credit, and vice versa.

School of Business

Description of Courses

THE UNIVERSITY reserves the right to withdraw, modify, or add to the courses offered, or to change the order of courses in curricula as may seem advisable.

The University further reserves the right to withdraw in any year any elective or special course for which less than twelve enrollments have been received. Regular students so affected by such withdrawal will be permitted to choose some other course. In the case of special students a full refund of all tuition and other fees will be made.

Students in Boston and Springfield should consult the schedule of classes in the respective city where they are to attend for information as to courses given during the present year.

All full-year courses are numbered with a double consecutive number and all half-year courses with a single number. The letter or letters immediately preceding the numbers indicate the classification of the course. The number of class sessions indicated for each course includes the final examination session. During the war period all full-year courses will have mid-year examinations and course credit will be granted on a semester basis.

ACCOUNTING (A)

Applicants for admission to the School who have had experience in accounting or book-keeping or who have pursued systematic courses in institutions of less than college grade may take an examination for placement purposes in Introductory Accounting. Those who pass this examination will be admitted to Intermediate Accounting and may substitute an elective course in lieu of Introductory Accounting.

INTRODUCTORY ACCOUNTING

A 1-2 Thirty-three sessions; 5 hours' credit. No previous knowledge of bookkeeping or accounting necessary.

This course provides basic instruction for those who plan to specialize in accounting or for those who wish to enroll later for more advanced courses. Emphasis is placed upon proprietorship accounts, including books of entry, statements, business practices, adjustments, and an introduction to partnership accounts. Drill and practice work are required for proficient handling of simple accounting transactions.

INTERMEDIATE ACCOUNTING

A 3-4 Prerequisite: A 1-2, or the passing of a placement examination. Thirty-three sessions; 5 hours' credit.

A study of partnership accounting, including organization, dissolution, and liquidation of the partnership, emphasis being given to the corporate form of accounts with attention to manufacturing and trading activities. In addition to the drill and practice work on accounting technique, a mastery of basic principles of general accounting is required.

ACCOUNTING AIDS TO MANAGEMENT

A 5-6 Thirty-three sessions; 5 hours' credit. No previous knowledge of bookkeeping or accounting necessary.

A study of the broad background of accounting and business transactions so as to enable the student to analyze and interpret intelligently financial statements and other accounting reports. The course demonstrates the use of accounting in management and financial control. Emphasis is placed on the development of accounting fundamentals, preparation of financial

statements, corporation and manufacturing accounts, evaluation of balance sheet items, analysis and interpretation of financial statements and other trends, and the use of accounting as an aid to management.

ACCOUNTING PROBLEMS

A 7-8 Prerequisite: A 3-4 Thirty-three sessions; 5 hours' credit.

Develops power of analysis in utilizing accounting data. Problems are used as the basis for instruction and discussion to cover the more advanced phases of financial statements and accounts found in the more complex business organizations.

COST ACCOUNTING

A 9-10 Prerequisite: A 7-8 Thirty-three sessions; 5 hours' credit.

Acquaints the student with the relationship of cost accounting to management and administration control and shows how adequate cost systems may further the intelligent management of business enterprises. Numerous problems serve as the basis for a study of the various accounts, records, systems, and methods commonly used in modern cost accounting.

AUDITING

A 11 Prerequisite: A 7-8 Seventeen sessions; 2½ hours' credit.

Accounting facts and practices are analyzed to determine whether or not they conform to professional practice. The work of the auditor in relationship to professional requirements, the mechanics of auditing, and the preparation of reports and certificates are studied.

INCOME TAX PROCEDURE

A 13-14 Prerequisite: A 3-4 Thirty-three sessions; 5 hours' credit.

A detailed study is made of Federal and State tax laws, their administration and application to the incomes of individuals, partnerships, corporations, and fiduciaries; treasury and tax department regulations and rulings; and of the decisions of the Board of Tax Appeals, and of various Federal and State courts. Practice in making out reports and returns, and a study of the procedure of handling claims, form the basis of applied instruction.

CONSTRUCTIVE ACCOUNTING

A 15 Prerequisite: A 7-8 Seventeen sessions; 2½ hours' credit.

To acquaint students with the principles underlying the construction of accounting systems and the procedure of system installation. The course is developed by means of problem projects beginning with an analysis of the accounting needs of a small business. By gradual steps increasingly larger businesses are studied and accounting systems developed to meet their needs. Special attention is given accounting records in relation to the expansion of the accounting system.

ADVANCED ACCOUNTING PROBLEMS

A 17-18 Prerequisite: A 7-8 Thirty-three sessions; 5 hours' credit.

This course is designed primarily to meet the requirements of those students who intend to enter the accounting profession or to assume responsibilities in commercial accounting. Emphasis in this course is devoted to specialized problems in connection with consolidations, mergers, holding companies, and other more advanced and complicated accounting situations. The course thoroughly prepares the student for the C.P.A. Review in final preparation for the State C. P. A. and American Institute examinations.

C.P.A. PROBLEMS

A 19-20 Prerequisites: A 9-10; A 11; A 17-18; L 1-2 Thirty-three sessions; 5 hours' credit.

This course provides a thoroughgoing and complete review of accounting theory and practice, and is intended primarily for those who contemplate taking the C. P. A. examinations. Practice in the classroom is provided under substantially the same conditions as exist in the C. P. A. examination room. Carefully selected problems, taken from C. P. A. examinations, in Accounting Theory and Practice are worked out in the classroom, and are supplemented by lectures, demonstrations, and test questions.

DISTRIBUTION (D)

Marketing enters into and influences every field of business and includes not only the direct process of the sale of goods, but the whole organization by which goods find their way from the original producer to the ultimate consumer. The change in the economic structure during the past ten years growing out of higher standards of living, the development of new occupational interests, and the shift of population to large cities, has tended to increase the cost of marketing of goods. Just as the elimination of waste in production was the keynote of business fifteen years ago, the reduction of expense and the introduction of more efficient methods in distribution are the foremost thought of business leaders today. For this reason courses in marketing form one of the basic elements in a business education.

MARKETING

D 1-2 Thirty-three sessions; 5 hours' credit.

An understanding of the various methods in common use for selling goods, and of the typical problems that arise in the course of distributing goods from the manufacturer through the middlemen and dealers to the consumers is provided. The selling problems of the manufacturer, the wholesaler, the retailer, and the specialty agent are studied in relationship to the various types of industries and commodities.

PRINCIPLES OF SELLING

D 3 Seventeen sessions; 2½ hours' credit.

This course deals with the evolution of modern salesmanship, its history, development, and opportunities. The psychology of selling, preparation for the interview, the proper approach, arousing the buying urge, the meeting of sales resistance, the closing of the sale, and the qualities of good salesmen are among the topics discussed.

SALES MANAGEMENT

D 4 Seventeen sessions; 2½ hours' credit.

This is a continuation of the course in the Principles of Selling. It includes study of the types of sales organizations, the work of sales executives, sales planning and policies, sales campaigns, management of the sales force, financing of sales, and the control of sales operations.

PRINCIPLES OF ADVERTISING

D 5 Seventeen sessions; 2½ hours' credit.

A comprehensive course designed to familiarize the student with the nature and scope of advertising and its place in the commercial and economic structure. History, definition, and functions of advertising. Organization and functions of advertising departments and advertising agencies. Varieties of advertising and media. Problems, market investigation, planning campaigns. Laws, ethics, and regulations. A study of the broader aspects of advertising with special emphasis on current trends and developments.

RETAIL STORE ADVERTISING

D 6 Seventeen sessions; 2½ hours' credit.

This course is devoted to the study of the elements of retail advertising. The various media used by retailers are considered with drill in the preparation of copy therefor. A study is made of institutional, straight merchandise, and sales copy as exemplified in current advertising of important retail concerns. The principles of layout receive attention as well as the mechanics of production including art work, plates, typography, and printing. The aim is to furnish a practical foundation fitting students for a creative career in retail advertising.

ENGLISH (E)

The value that comes from the effective use of good English in business reports and communications is being increasingly emphasized by business leaders. All students who are candidates for the degree or certificate are required to pursue systematic courses in English. Those having outstanding deficiencies may be required to take additional courses in English.

BUSINESS ENGLISH

E 1-2 Thirty-three sessions; 5 hours' credit.

Efficient training is provided in the use of correct and forceful English for business purposes. Practice in the construction of sales, collection, credit and application letters, business articles,

reports and newspaper stories provides opportunities for written expression on business topics. Study is devoted to the elements of logic as related to the organization and expression of thought. The course includes study of the fundamentals of sales promotion practice with special emphasis on buying motives. Oral work in class is intended to prepare students for participation in business conferences and public meetings.

ADVANCED ENGLISH

E 3-4 Prerequisite: E 1-2 or equivalent. Thirty-three sessions; 5 hours' credit.

Literature of value and interest to business men forms the basis of study and practice in writing so as to develop an effective easy style of expression. The student acquires a cultural basis which will serve not only as a source of entertainment in leisure hours but also an aid for business communications.

PUBLIC SPEAKING

E 5 Seventeen sessions; 2½ hours' credit.

Those who wish to speak convincingly, to overcome self-consciousness, and to develop self-confidence will find this course meeting their needs. Students are trained in the selection and organization of speech materials, the delivery of the speech, and in other important essentials of effective speaking. The entire course is practical and not theoretical. Work is centered around the interests and topics of business men and is specifically adapted to their needs.

BUSINESS REPORTS AND CONFERENCES

E 6 Seventeen sessions; 2½ hours' credit.

This course is devoted to the preparation and presentation of business reports and to the techniques of planning for, participating in, and conducting business conferences. These reports and conferences are based upon business problems and situations. The nature of a thesis, the selection of a subject, the preparation of an outline, the collection and organization of data are considered in this course. Students are given the fullest possible opportunity to participate actively at each session.

BUSINESS READINGS

E 7 and E 8; 2½ hours' credit for each course.

The two courses in Business Readings are designed to broaden the student's acquaintance with selected writings in the field of business and to introduce him to the real pleasure and values that come from such reading. There are no required lectures for these courses, each of which carries two and one-half semester hours' credit and for which a charge of ten dollars is made.

At the beginning of the Upper Middler and the Junior years, each degree candidate registers for a Readings course and is furnished a list of titles from which he makes selections for readings in accordance with the course requirements. Written reports are submitted on these readings, and are due on or before registering for classes the following year.

ECONOMICS (Ec)

Economics is the basic foundation upon which the general principles of business as a science are founded. A mastery of the underlying economic laws enables the student to see clearly the forces which business men must use in arriving at solutions to their problems. An appreciation and understanding of economics is a necessary factor in the equipment of a progressive business man.

BUSINESS ECONOMICS

Ec 1-2 Thirty-three sessions; 5 hours' credit.

The characteristics of modern business and industry are studied in terms of their operations and relationship to the modern economic system. Economic laws and principles are considered in terms of business conditions peculiar to our own time and country and how these laws govern prices, wages of labor, profits, credit, competition, work and working conditions, and rewards for business enterprise.

FINANCIAL ORGANIZATION

Ec 3-4 Prerequisite: Ec 1-2 Thirty-three sessions; 5 hours' credit.

The functions and services of money and credit as mediums of exchange are discussed. A detailed study is made of the organization and functions of modern financial institutions such as commercial banks, trust companies, investment security houses, savings institutions, stock exchanges, the Federal Reserve System, and other credit and financial institutions.

INVESTMENT PRINCIPLES AND PRACTICE

Ec 5-6 Thirty-three sessions; 5 hours' credit.

Consideration is given to the determination of investment policies and to the analysis of various kinds of securities such as types of bonds, preferred and common stocks, and their place and use in the investment field. Attention is also given to the economic factors and changes as they affect investments.

BUSINESS STATISTICS AND FORECASTING

Ec 7-8 Prerequisite: Ec 1-2 Thirty-three sessions; 5 hours' credit.

The objective of this course is to train the student to use statistics in making better analyses of the business problems than is possible without statistics. The point of view of the business man and not the professional statistician is maintained throughout the study. In the early part of the course the emphasis is placed upon the necessary technical methods, using business problems as illustrations; in the second part of the course, the point of view is changed and the emphasis is placed upon solving practical problems, using statistical methods as tools when necessary. The practical application of statistics to business is directed toward business forecasting, business budgeting, production and labor, market analysis, investment and financial analyses, and executive and management statistics.

ECONOMIC DEVELOPMENT OF THE UNITED STATES

Ec 9 Seventeen sessions; 2½ hours' credit.

A broad general survey is made of the economic and industrial development of the United States from the colonial period to the present time. Emphasis is placed upon the origin and development of American industries, changes in industrial and commercial policies, economic forces at work in business and social institutions, and upon problems arising from the growth and development of business and industry in the United States.

INTERNATIONAL ECONOMIC RELATIONS

Ec 11-12 Thirty-three sessions; 5 hours' credit.

A seminar course for advanced students in the field of economics. Current developments in international relations as they affect business in the United States are considered from an objective point of view. The student is taken behind the scenes of international relations to analyze the basic problems of economics, finance, and diplomacy involved. The effect of foreign policies upon business in the United States is studied.

LAW (L)

Underlying the ever increasing complexity of modern business is a growing body of law which defines and directs business operations.

LEGAL ASPECTS OF BUSINESS

L 1-2 Thirty-three sessions; 5 hours' credit.

A study of the application of legal machinery to the current needs and demands of modern business for facilitating organization, credit, finance, security or protection from risks, marketing, and commercial and industrial peace. The course also provides excellent preparation for the law phase of the C.P.A. Examination.

MANAGEMENT (M)

With the complex and rapidly changing conditions of modern business, the functions of administration and management must be clearly defined and maximum economies effected. Through the problem approach, these courses train the student to supplant guesswork and trial and error processes with organized knowledge and proven management methods. Courses designated by the symbols M3, M4, and M6 are offered in Boston only.

BUSINESS AND INDUSTRIAL MANAGEMENT

M 1-2 Thirty-three sessions; 5 hours' credit.

An introductory survey of the whole field of business and industrial administration with special emphasis upon training the student in the analysis of business and industrial problems.

The functions of the business and industrial administrators are discussed with particular reference to the control policies and devices of the manager. The course presents the problems of business and industry as an interrelated whole and helps the student to see the lines of study which lead to solution of those problems.

PRINCIPLES OF PRODUCTION

M 3 Prerequisite: M 1-2 Seventeen sessions; 2½ hours' credit.

A basic treatment of the fundamental manufacturing processes. Topics studied include: factory organization, manufacturing and assembly sequences, selection and co-ordination of productive facilities, product design, inspection and salvage.

SCIENTIFIC MANAGEMENT

M 4 Prerequisite: M 3 Seventeen sessions; 2½ hours' credit.

The practical application of the principles of scientific management to production problems. The course embraces study in process research including time and motion study, standardization of materials, analysis of operations, methods of production, and production control including wage incentive systems.

PSYCHOLOGY FOR BUSINESS AND INDUSTRY

M 5 Seventeen sessions; 2½ hours' credit.

Business psychology is the study of predicting and influencing human behavior in business. It provides an understanding of man's mental life, of how the individual and the group behave and are influenced in their behavior, and of how the business man may predict and control his own behavior and that of those with whom he works. The study and analysis of the student's own personal problems and behavior constitute a valuable and interesting phase of the course.

PURCHASING

M 6 Seventeen sessions; 2½ hours' credit.

A practical study of the functions and duties of the purchasing agent, the organization and administration of his department, and his relations with other departments. The following are representative of subjects discussed: the purchasing function, qualifications of the purchasing agent, selection of supply sources, purchasing policies and budgets, cataloging information, testing and inspection of purchases, and stores control.

CREDITS AND COLLECTIONS

M 7-8 Thirty-three sessions; 5 hours' credit.

This course furnishes instruction in the theory of credit, the workings of a Credit Department, whether in the wholesale or retail field, and in the analysis and use of credit statements as aids to efficient management.

INDUSTRIAL MANAGEMENT PROBLEMS AND POLICIES

M 9-10 Thirty-three sessions; 5 hours' credit.

Co-ordination of the functional relationships which exist between the different departments of business with the problems affecting the determination of administrative and managerial policies is the purpose of this study. Special attention is given to scientific management of industry and business and to the co-ordination of production with purchasing, sales, finance, and transportation. Cases and problems dealing with organization and expansion, consolidation and combinations, reorganizations, internal administration, industrial and human relations, and governmental control form the basis of discussion and study.

GOVERNMENT CONTROLS IN BUSINESS

M 11-12 Thirty-three sessions; 5 hours' credit.

A study of the economic and political relationships which exist between business and government with particular emphasis upon the work of the Interstate Commerce Commission and the Federal Trade Commission; also other government agencies including the U. S. Departments of Agriculture, Commerce, Labor, and particularly the Bureau of Labor Statistics. Social as well as economic aspects of government control will be considered.

BUSINESS PLANNING AND RESEARCH

M 17-18 Prerequisite: Ec 7-8 Thirty-three sessions; 5 hours' credit.

This course is devoted primarily to a study of economic and business planning and to the technique of research and study in relationship to planning. The fundamental principles

underlying the solution of research problems will be analyzed and students will be required to apply those principles to specific problems involving planning and research.

BUSINESS ADMINISTRATION SEMINAR

M 19-20 Prerequisites: A 5-6, D 1-2, Ec 3-4, Ec 7-8. Thirty-three sessions; 5 hours' credit.

This course provides the unique opportunity to use the information acquired from other courses in an intelligent intimate discussion of live current problems which arise daily in marketing, production, and finance, with notes as to social significance. Emphasis is placed on the translation of problems out of the academic book atmosphere into the personal terms in which these problems must be met in business life and solved. Work is conducted upon a prepared individual conference basis.

THESIS (T)

BACHELOR'S DEGREE THESIS

T 3-4, 5 hours' credit.

Each candidate for the B.B.A. degree may submit a thesis or the Business Readings reports. The conditions to be fulfilled in connection with a thesis are:

1. The selection of the subject, preparation of the outlines, and the collection of data must be worked out in accordance with the requirements of the Committee on Theses.
2. Two typewritten copies of the completed thesis must be presented to the Dean, or the Director in the Divisions, not later than March 15 of the year in which the candidate expects to graduate.
3. The thesis is expected to meet the equivalent of the work required in a full-year course. It is expected to give evidence that its writer has made a thorough study of the subject or problem selected, that he has marshaled the data in a businesslike manner, and has given evidence of his ability to reach sound and reasoned conclusions, and to present his findings in clear and convincing terms.

OCCUPATIONS (O)

The School considers that the knowledges, skills, and experiences acquired in the full-time employment of its students are the equivalent in many respects to the work carried on in a laboratory. For this reason all members of the three upper classes who expect to qualify for the Bachelor of Business Administration degree must meet the occupational experience requirements listed below.

In order that this occupational experience may have the maximum educational value, the School maintains a Department of Vocational Guidance and Placement under the supervision of a competent Director. It is the responsibility of this Department to assist those students:

- a. who need advice and guidance about employment in business;
- b. who are unemployed and need placement service, and
- c. who are already employed but need to change their present employment connections in order to obtain the greatest possible benefit from their training and experience.

There is no tuition charge for the occupational courses listed below, even though they are required for the degree. Furthermore, all services of the Department of Vocational Guidance and Placement are without charge to the student.

ELEMENTARY OCCUPATIONS

O 1-2 10 hours' credit.

In this course students are required to meet with the Director of Vocational Guidance and Placement in groups or individually as he may direct, and to submit in the Upper Middler year a complete and detailed record of their employment for the college year. This report is one factor in evaluating the occupational experience credit of the student.

INTERMEDIATE OCCUPATIONS

O 3-4 10 hours' credit.

A continuation of O 1-2. Continuing guidance under the supervision of the Director of Vocational Guidance and Placement. Consideration of psychological and economic factors affecting vocations; vocational objectives. A complete report of the employment of the Junior year is required.

ADVANCED OCCUPATIONS

O 5-6 10 hours' credit.

A critical consideration of the student's present employment in the light of present-day occupational trends. Individual conferences with a view to vocational adjustments, if deemed desirable. A complete report of the employment of the Senior year is required.

School of Business

General Information

Classrooms and Libraries

The classrooms are furnished with modern equipment and are thoroughly adapted to evening school work. Improvements in classroom facilities are constantly being made to meet the needs of the student body.

In connection with the General Library of the University in Boston a special section is devoted to books on business subjects. In addition, the leading trade and business magazines are available for student use. Additions are constantly being made to the business section of the Library in recognition of the new demands for business education and research. The reading rooms of the Library are open Monday through Friday from 8:45 A.M. to 10 P.M. They close at 5 P.M. on Saturdays and are not open Sundays and holidays.

All members of the School in Boston are entitled to the privilege of using the Boston Public Library including the Business Branch at 20 City Hall Avenue. The same privilege is accorded students in the Divisions for the use of the libraries in their respective cities.

An appreciable library to which additions are constantly being made is available in the Division at Springfield.

Textbooks and Supplies

The Northeastern University Bookstore is a department of the University and is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the University may be purchased at the Bookstore. In addition, the Bookstore also carries a large number of general supplies. In Boston the main store is situated in the basement of Richards Hall.

In Springfield, the store is located adjacent to the School Offices.

Student Council

The social and extracurricular life of the School is in charge of Student Councils consisting of representatives from each class or school group. In addition to arranging for occasional social affairs, special lectures, and meetings, the council represents the interests of the student body. The faculty and the officials advise with the council in regard to school policies.

Honor Fraternity

Sigma Epsilon Rho is the honor fraternity in the School of Business. Its purposes are:

To promote acquaintance and good fellowship among those men who have attained highest scholastic standing in the School.

To stimulate the student body to higher scholastic accomplishment through the bearing, influence, and work of these selected men.

To develop methods of mutual improvement and advancement among the members of this fraternity.

To support high moral, professional and scholastic ideals.

Only students with honor standing are admitted to the fraternity. Admission is by invitation, after nomination by the School faculty.

In Boston an outstanding business book is awarded each year by Sigma Epsilon Rho Fraternity to the highest ranking student for that year in each of the Sophomore, Lower Middler, Upper Middler, and Junior Classes. Students will receive the award only in the event that they enroll for the subsequent year.

Scholarships, Awards, and Loan Funds

In Boston

The following scholarships and awards are available to students enrolled for a normal schedule of fifteen or more semester hours of class work who are pursuing a degree or title program in the School of Business in Boston. One-fourth of the scholarship is applied to the tuition of the recipient at each quarterly payment.

SCHOOL OF BUSINESS HONOR AWARDS

A half tuition scholarship award is made each year to the highest ranking student of that year in the Junior, Upper Middler, Lower Middler, Sophomore and Freshman classes, who re-enrolls the following year for a normal schedule of study.

A quarter tuition scholarship award is made each year to the second highest ranking student of that year in the Junior, Upper Middler, Lower Middler, Sophomore and Freshman classes, who re-enrolls the following year for a normal schedule of study.

To be eligible for either a half or a quarter tuition honor award, a student entering the School with advanced standing credit, except by examination, must have completed at least thirty semester hours of classroom work at the time the award is made.

THE CLARKSON-ALUMNI SCHOLARSHIP

This scholarship, made available through the generosity of the Alumni Association of the School of Business in Boston, is in memory of George S. Clarkson, a member of the Class of 1914 and an instructor in accounting for many years. This scholarship, which is indeterminate in amount, is granted to the student who obtains the highest final grade in the course in Auditing unless he is eligible for an award of greater monetary value in which event the Clarkson-Alumni award will be made to the highest ranking student in Auditing who is not eligible for such an award. To be eligible for this scholarship the student must pursue a normal schedule the following year.

KAPPA TAU PHI SCHOLARSHIP

This scholarship award, amounting to thirty dollars, is made available by the Kappa Tau Phi Sorority. It is granted annually to the woman student who ranks highest in her class at the end of the Sophomore year unless she is eligible for an award of greater monetary value in which event the award will be made to the highest ranking woman student who is not eligible for such an award. To be eligible for this scholarship the student must pursue a normal schedule the following year. In determining this award grades of all courses completed in the Freshman and Sophomore years shall be considered.

ALUMNI LOAN FUND

The Alumni Association of the School of Business in Boston has provided a loan fund which is available to students in the Senior and Junior classes in Boston who are in need of financial assistance in order to continue their studies. Applications for loans should be addressed to the Dean of the School. All applications must be approved by the Alumni Loan Fund Committee.

SCHOOL OF BUSINESS LOAN FUND

By vote of the Student Council a part of the Student Activities fees for 1937-1938 was set aside to provide a loan fund which is available to students temporarily in need of small loans for tuition or other School charges. Students needing assistance from this fund should confer with the Dean who administers it.

In Springfield Division

The following scholarship and loan funds are available to students applying for, or admitted to, curricula offered by the Springfield Division of the University:

JUNIOR SCHOLARSHIP

A scholarship of \$25 applicable to tuition of the next year is awarded annually at Commencement to that student of the Junior Class who has made the highest average grade in all courses from his Freshman to Junior years inclusive. The scholarship is donated by Delta Chapter of the Pi Tau Kappa Fraternity.

MIDDLE SCHOLARSHIP

A scholarship of \$25 applicable to tuition of the next year is awarded annually at Commencement to that student of the Lower Middle Class, who has made the highest average grade in all courses of the first three years. The scholarship is donated by Sigma Nu Upsilon Sorority.

SOPHOMORE SCHOLARSHIP

A scholarship of \$25 applicable to tuition of the next year is awarded annually at Commencement to that student of the Sophomore class who has made the highest average grade in all courses of the first two years. The scholarship is donated by Alpha Chapter of the Epsilon Phi Sigma Fraternity.

FRESHMAN SCHOLARSHIPS

Awards in multiples of twenty dollars toward Freshman tuition are available to applicants for admission. They are made upon the basis of academic excellence for, and at the termination of, the required previous academic training. One of these is granted to that student who, of the first ten in average for the school or college, as the admission requirement may necessitate, shall stand highest of the number from that institution who applied for admission in the subsequent fall to Northeastern University, Springfield Division.

STUDENT AID FUND

A limited fund originated by thoughtful undergraduates, augmented by certain faculty support, and the balance in a given year from student activities fees, from which meritorious students may obtain loans from time to time for tuition usage. It is administered by the Director of the Division. Applications for aid should be made through the Bursar.

School of Business

Administrative Policies

Requirements for Admission

All applicants whose credentials are approved by the Committee on Education, and who are admitted for degree or other programs are classified as regular or conditioned students.

Regular Students**

Applicants for admission as regular students must present evidence of the completion of an approved secondary school course, or the equivalent 15 units.*

Conditioned Students**

Applicants who do not meet the requirements for admission as regular students may be admitted as conditioned students provided they present satisfactory evidence of ability to profit by the work of the School.

Conditioned students may remove their admission conditions and be re-classified as regular students by using *a*, *b*, *c*, or a combination of *a* and *b*.**

- a*. By applying courses which they have completed in the School of Business or in another approved college or university at the rate of one unit for each two and one-half semester hours. A course cannot be credited both for the removal of admission conditions and for the degree.
- b*. By applying units for work completed in an approved secondary school, or for work certified by an accredited certifying agency.
- c*. By action of the Committee on Education based upon all factors affecting the achievement and ability of the student in the School, when the student shall have completed the first thirty semester hours of work in his program; provided this work shall have been completed in not less than three years of attendance and with an average grade of not less than 70%. All conditioned students are required to take prescribed aptitude tests during the first year of attendance. These tests, for which no specific preparation can be made, are designed to test intellectual capacity and general fitness for college work rather than preparation in the specific subject matter of a secondary school program.

* A unit represents a year's work in any subject in any approved secondary school constituting approximately a quarter of a full year's work, or the equivalent. A four-year day high school course is regarded as representing at least 15 units of work, or 3 units in junior high school and 12 units in a three-year senior high school.

**For additional requirements for the Engineering and Business curriculum in the Springfield Division, consult special bulletin or the Divisional office.

Advanced Standing

Advanced standing credit in the School may be obtained in one or both of two ways, as follows:

By Transfer of Credit. Subject to the approval of the Committee on Education, credit may be given for work completed in other approved schools, colleges, and universities. Applicants desiring credit by transfer should indicate their desire at the time the application for admission is filed. A copy of the catalog of the institution from which the transfer is sought should accompany the application for admission.

By Examination. Applicants who desire to secure advanced standing credit by examination are required to apply in writing for examination in those subjects for which credit is sought. Proper forms should be obtained from the School Office and filed at the time the application for admission is filed. Applications for examinations are approved by the Committee on Education which will take into account previous training, business experience, and other factors showing the applicant's special preparation and ability in the subject or subjects in which credit is sought by examination.

A grade of 75% must be obtained in an examination in order to secure advanced standing credit for the subject. Upon successfully passing an examination, the applicant may be given full credit as though the subject had been pursued in the School, or may be excused from the subject and permitted to select an elective course in lieu thereof.

The same subject cannot be offered both for admission credit and as a basis for advanced standing.

Registration

Before attending classes, students should report at the School Office for registration. Students are requested to assist in lessening congestion during the opening week by registering during the two weeks previous to the opening of the School.

Late registration for those unable to enter at the opening of the School year will be permitted at the discretion of the Dean, or the Director in the case of the Divisions.

Class Sessions

Classes are held each evening of the week except Saturday. *The normal schedule for students pursuing a degree, title, or certificate program is three evenings a week. Students may arrange their schedules so as to attend classes one, two, three, or four evenings a week depending upon the number of subjects taken.* Students interested in the schedule of classes should apply to the office of the school in the city in which they expect to attend.

Notify the Office Immediately

Of change of address.

Of withdrawal from any course — otherwise the fee for that course will be charged.

Of withdrawal from the School, giving date of the last session attended.

Attendance

The limited amount of time devoted to each subject and the rapid rate of progress in covering the essential content of a course make it highly desirable that students be present at every session. Because of the importance of regular attendance and its bearing upon the quality of scholarship, the policies governing attendance are:

Students who attend 75% or more sessions in a course are entitled to pass in that course if they attain a minimum final grade of D.

Students who attend between 50% and 74% of the sessions in a course are entitled to pass in that course if they attain a minimum final grade of C. Those who do not attain the minimum required grade of C may remove the condition only by means of a make-up examination in which they must receive a mark sufficient to raise the course grade to C.

Students who attend less than 50% of the sessions in a course will be considered ineligible to take the final examination or to receive any credit for the course.

Attendance credit is granted only when the student is in attendance at least three-quarters of the class period. Three separate absences of less than 30 minutes each constitute one complete absence unless such partial absences are canceled by satisfactory excuses.

Outside Preparation

It is expected that students will devote on the average two hours to preparation for each hour spent in the classroom. A student carrying a normal program of three evenings a week will, therefore, be expected to devote to outside preparation an average of eleven to twelve hours a week. Some courses require more time for preparation than others.

Regular Examinations

The general policies governing regular examinations are:

A final examination will be held at the end of each course unless an announcement to the contrary is made.

The minimum passing grade in a regular final examination is D.

In case a student is excused from a final examination by the Dean or Director, he may take the next regular or conditioned examination in the subject. The student who fails to complete a course within one year from the termination of that course must repeat the course, except that in special cases for justifiable cause, the Committee on Education may waive this rule.

The student who has received a passing mark in a final examination and in a final examination and in a final examination for the purpose of raising his grade unless he repeats the course in its entirety.

Condition Examinations

The following policies govern re-examinations:

Permission for taking a make-up examination is dependent upon the quality of the work which the student has done throughout the course and is a privilege which the Committee on Education may grant to students who have received an E grade or an incomplete (Inc.).

The condition or make-up examinations are given in September. Students should consult the School Office for the specific dates of each examination.

Only one make-up examination in any given subject is allowed for the purpose of removing a conditional failure.

A make-up examination for purposes of removing a condition or an incomplete grade must be taken within the next school year. In such cases students may take either the examination at the condition examination period or the final examination when next given if within a period of one year. A fee of \$2 is charged for each School of Business examination taken out of course.

A minimum grade of 65% is required on each make-up examination unless a higher minimum is specified.

Whatever grade the student obtains on the make-up examination is credited as the final examination grade, but in no case can the final grade in the course be more than 70% except in the case of students who have been excused from taking the regular final examination.

Tests

Four tests in full-year courses and two tests in half-year courses are regularly scheduled. These tests are regarded as a part of the term or course work. Since no make-up tests are given, students who miss a test should confer with their instructors regarding their status.

Marks and Credits

The following system of grading is in use:

Superior Work, A; Above Average Work, B; Average Work, C; Lowest Passing Grade, D; Unsatisfactory Work, E; Failure, F; Incomplete, Inc.

Students receiving an E, or unsatisfactory work grade, in an examination or as a final grade in the course, may remove the unsatisfactory grade by taking a make-up examination when it is next given, or at the time of the conditional examinations in September. The minimum passing grade of 65% is required on the make-up examination, unless a higher minimum is designated. In no case will a student taking a make-up examination be allowed more than a C for a final grade even though a higher grade may be obtained.

Students receiving an "F" grade in a course must repeat the course in its entirety including term work, examinations, and attendance.

The policy is followed of mailing all grade and status reports to students instead of issuing these reports at the School Office or over the telephone.

A passing grade in a final examination as well as a passing final grade in the course is necessary in order to receive credit in the course.

Credit for one-half of a full-year course is not generally given, and in any event only upon approval by the Dean in advance of beginning the course.

In order to qualify for a degree, title, or a certificate the student must maintain a general average of C for the entire program. This is not interpreted to mean that each course must be passed with a grade of C, but that the average of all courses must be at least C. Grades of courses credited by transfer or by examination are not included in computing averages.

Graduation with Honors

Honors are based upon the excellence of the work performed by the students in the School. Three honorary distinctions are conferred upon properly qualified candidates for the bachelor's degree upon graduation:

Highest honors to those who have completed all work with an average of 95% with no grade less than C.

High honors to those who have completed all work with an average of 90% with no grade less than C.

Honors to those who have completed all work with an average of 85% with no grade less than C.

These honors are subject to further conditions as follows:

To be entitled to honors a student must have completed a minimum of two full years of study in the School.

Courses credited by advanced standing whether by transfer or by examination will be eliminated in determining honors.

Probation and Discipline

The Committee on Education in dealing with students whose work in the School may be unsatisfactory or whose conduct is such as to make it inadvisable for them to continue as members of the student body, considers each case upon its individual merits. The following general principles are kept in mind in handling such cases:

Students whose scholarship in any given year is unsatisfactory may be dropped from the School or may be placed on probation with the privilege of spending a year in review.

When a student is placed on probation, the probation is formally imposed for a definite time and can only be extended by approval of the Committee on Education.

This Committee has the authority to dismiss from the School or place on probation at any time or to strike off from the list of candidates for the degree, any student whom it may deem unworthy either on account of unsatisfactory scholarship or for any great defect of conduct or character. The Committee may ask any student to withdraw from the School who is obviously out of sympathy with the aims and ideals of the School.

School of Business

Tuition and Other Fees

Matriculation Fee

The University matriculation fee of \$5 must accompany the initial application for admission to the University. This fee is not refundable.

University Fee

All students enrolled in the School of Business are charged a University fee based on the number of semester hours for which the student is enrolled. The charge is 70 cents a semester hour of classroom work, but not exceeding \$10 in any one year. This fee covers in part Library, general materials, general university service charges, and similar items for which separate fees are frequently charged by other colleges and universities. It is payable by all students regardless of date of admission or the curriculum in which they are enrolled. For students enrolled for the entire year, the University fee is payable one-half when the student enrolls in September, and one-half with the January payment. If enrollment is for a single semester, the fee is payable with the first payment of the semester.

Tuition Fees

Tuition fees for courses in the School of Business are based on a charge of \$8 a semester hour.

Complete Programs

A student carrying a normal program of three full-year courses throughout the school year will complete fifteen semester hours of work for which the charge is \$120. This charge is payable in four payments of \$30, the first being due during the opening week of school and the other three during the weeks of November 15, January 17, and March 6.

Single Courses

The charge for each half-year course carrying two and one-half semester hours' credit is \$20, payable in two payments of \$10, and for each full-year course carrying five semester hours' credit, \$40, payable in four payments of \$10, except that payment for any course completed in one semester must be made during the semester in which the course is completed.

Deferred Payment Privilege

Students who would be denied the advantages of a systematic education if required to meet the tuition payments in the manner specified above, may make other payment arrangements with the Dean, if attendance is in Boston, or with the proper Divisional officer, if attendance is in Springfield. A nominal charge is made for this service.

Courses in Other Departments of the University

School of Business students assigned to courses in other departments of the University are charged the tuition rates and other fees effective in the departments to which they are assigned.

Late Registration

No reduction in tuition is made for late registration. A student is neither entitled to classroom privileges nor considered as registered and enrolled until tuition due has been paid or satisfactory arrangements made in person with the Dean, if attendance is in Boston, or with the proper Divisional officer, if attendance is in Springfield.

Student Activities Fee

An activities fee is charged all students on the following basis:

\$1 for students enrolled for courses not exceeding five semester hours.

\$2 for students enrolled for courses exceeding five semester hours.

The fee is payable during the opening week in September. Students registering in the second semester pay the fee at the time of registration. It is administered by the University authorities in the interest of the students, and is used primarily to promote extra curricular activities.

Other Fees

A fee of \$2 is charged for each make-up examination or advanced standing examination. This fee must be paid on or before the date of the examination.

A fee of \$10 is charged for each of the Business Readings courses. One-half is payable with the November tuition payment and one-half with the March tuition payment. This fee applies only to those who elect to submit Business Readings in lieu of a thesis, and is payable ordinarily during the Upper Middler and Junior years.

A thesis fee of \$20 is required of all degree candidates who elect to write theses. This fee is payable upon presentation of the thesis which is due not later than March 15 of the year in which the student expects to receive the degree.

The University graduation fee, charged to those who are candidates for a degree, is \$10, payable on or before May 1st of the year in which the student expects to graduate. A fee of \$5 is charged to all candidates for a title or certificate and is payable on or before May 1st of the year the program is to be completed.

Expense for Books and Materials

Students purchase their own textbooks and working materials. The cost varies according to the subjects for which the student is enrolled. The average cost for a normal program of three subjects is about \$13, with a maximum of approximately \$20. The textbooks for single courses range from \$1.25 to \$5.

General Financial Information

Checks should be drawn payable to Northeastern University.

Students who have withdrawn from a course for good cause and who are permitted to repeat it are credited with the tuition previously paid on that course, provided they re-enroll for the same course within the next two college years. The credit cannot be applied, however, until the balance due on the course has been paid.

Students are not permitted to attend class sessions or take any examinations or tests until they have paid their tuition fees or have made satisfactory arrangements for payments.

Students will not be advanced in class standing, or permitted to re-enroll in the University, nor will degrees be conferred until all financial obligations to the University have been met.

No certificate of honorable dismissal will be issued to any student who has not fully met his financial obligations to the University.

Withdrawals and Refunds Policy

In the event a student is obliged to withdraw from the School in which he is enrolled for causes deemed adequate by the Committee on Withdrawals, the balance of the tuition paid after the following deductions have been made will be refunded:

- a.* Four per cent of the total yearly tuition charge shall be deducted for each week of attendance or fraction thereof, in the event of enrollment for a full school year.
- b.* Ten per cent of the total tuition charged shall be deducted for each week of attendance or fraction thereof, in the event of enrollment for a semester.

The amount of tuition to be charged in the case of withdrawals shall be computed as indicated under *a* and *b* above from the date of each quarterly payment.

Matriculation, examination, thesis, and other fees are not refundable except that graduation and certificate charges will be refunded in case of non-qualification.

No refunds are granted unless the application for withdrawal is filed within forty-five days after the student has ceased attendance.

NORTHEASTERN UNIVERSITY

COEDUCATIONAL

COLLEGE OF LIBERAL ARTS

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

COLLEGE OF ENGINEERING

Offers curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. Classroom study is supplemented by experiment and research in well-equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

COLLEGE OF BUSINESS ADMINISTRATION

Offers curricula in Accounting, Marketing and Advertising, and Industrial Administration. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

SCHOOL OF LAW

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws.

SCHOOL OF BUSINESS

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

EVENING COURSES OF THE COLLEGE OF LIBERAL ARTS

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Economics, English, History, Government, Psychology and Sociology. A special program preparing for admission to the School of Law is also available. The program is equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Special courses also available. Degree of Associate in Arts conferred.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the co-operative plan. After the freshman year students may alternate their periods of study with periods of work in the employ of business or industrial concerns at ten-week intervals. Under this plan they gain valuable experience and earn a large part of their college expenses.

In addition to the above schools the University has affiliated with it and conducts: the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the degree of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

BOSTON, MASS.

School of Law
47 Mt. Vernon Street

Telephone: KENmore 5800

Other Schools
360 Huntington Avenue

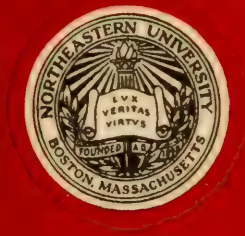
SPRINGFIELD, MASS.
114 Chestnut St.
Tel.: Spr. 6-3681

Northeastern University

COLLEGE OF

LIBERAL ARTS

BULLETIN OF EVENING COURSES
ANNOUNCEMENT FOR 1943-1944



BOSTON, MASSACHUSETTS

OFFICE HOURS

August 15, 1942 — June 12, 1943	
Monday through Friday	8:45 A.M.— 5:00 P.M. 5:30—9:15 P.M.
Saturday	8:45 A.M.— 1:00 P.M.
June 14, 1943 — August 14, 1943	
Monday through Friday	8:45 A.M.— 5:00 P.M.
Saturday	8:45 A.M.—12:00 M.
August 16, 1943 — June 16, 1944	
Monday through Friday	8:45 A.M.— 5:00 P.M. 5:30—9:15 P.M.
Saturday	
Until Labor Day	8:45 A.M.—12:00 M.
During September	8:45 A.M.— 4:00 P.M.
After October 1	8:45 A.M.— 1:00 P.M.

The office is closed on all legal holidays.

GIFTS AND BEQUESTS

Northeastern University will welcome gifts and bequests for the following purposes:

- (a) For its building program.
- (b) For general endowment.
- (c) For specific purposes which may especially appeal to the donor.

It is suggested that, when possible, those contemplating gifts or bequests confer with the President of the University regarding the University's needs before legal papers are drawn.

Gifts and bequests should be made only in the University's legal name, which is "Northeastern University."

For further information or an interview address:

Director of Evening Courses
Northeastern University
College of Liberal Arts
360 Huntington Avenue
Boston, Massachusetts

Tel.: KENmore 5800

NORTHEASTERN UNIVERSITY

COLLEGE OF LIBERAL ARTS

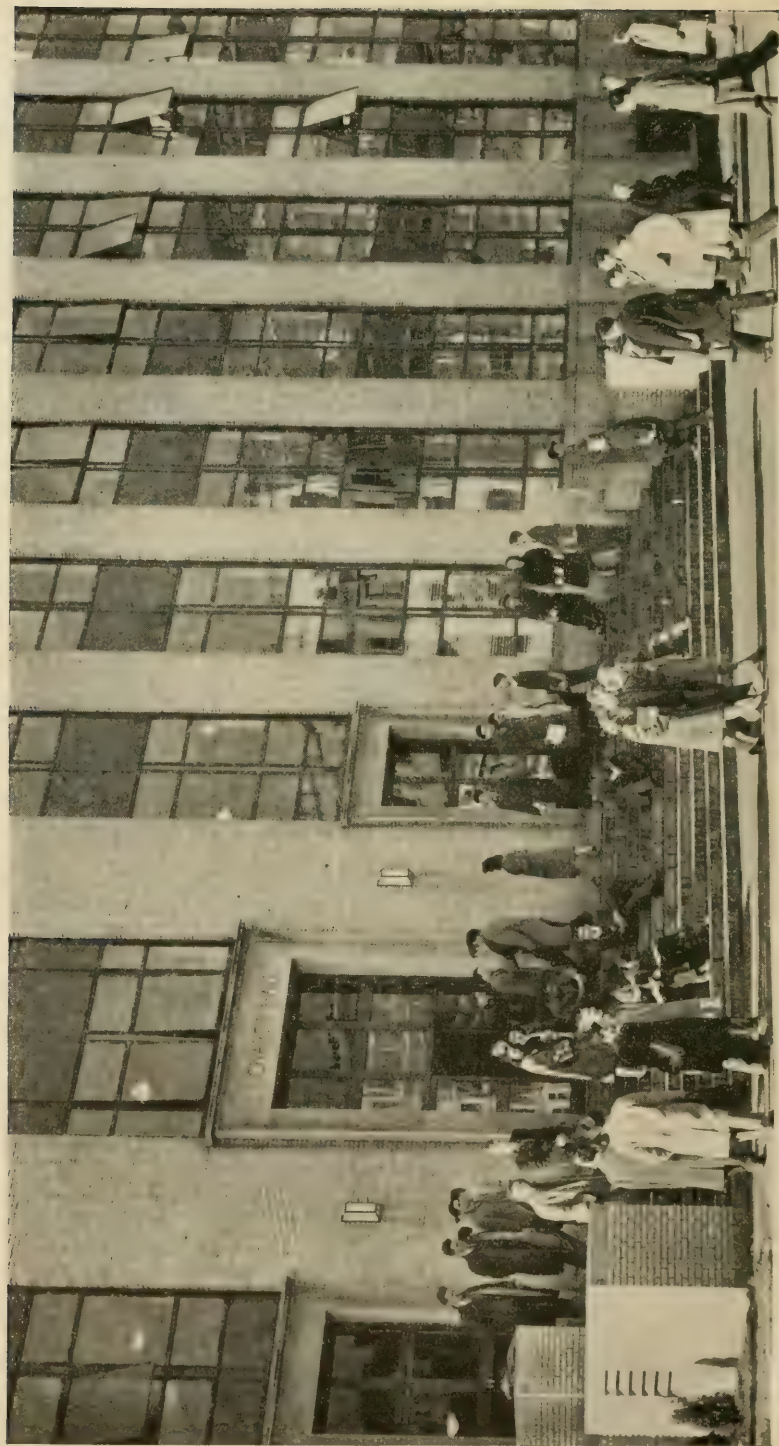
Bulletin of Evening Courses

Coeducational



The University is located at the entrance to the Huntington Avenue subway within nine minutes of Park Street and easily accessible from all points.

1943 : 1944



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COLLEGE OF LIBERAL ARTS

EVENING COURSES

CALENDAR

1943	Sept. 1-4	Make-Up Examinations
	Sept. 7, Tuesday	Classes Begin
	Sept. 7-13	Registration
	Oct. 12, Tuesday	Columbus Day (Classes suspended)
	Nov. 11, Thursday	Armistice Day (Classes suspended)
	Nov. 25, Thursday	Thanksgiving Day (Classes suspended)
1944	Feb. 22, Tuesday	Washington's Birthday (Classes suspended)
	April 19, Wednesday	Patriots' Day (Classes suspended)
	May 30, Tuesday	Memorial Day (Classes suspended)
	June 12-June 23	Final Examination Period
	June 24-Sept. 5	Summer Recess
		Baccalaureate Service and Commencement Exercises (Dates to be announced)

Northeastern University

THE NORTHEASTERN UNIVERSITY CORPORATION

ROBERT GRAY DODGE, *Chairman*

FRANK LINCOLN RICHARDSON, *Vice-Chairman*

CARL STEPHENS ELL, *President of the University*

GALEN DAVID LIGHT, *Secretary and Treasurer*

JOSEPH FLORENCE ABBOTT
CHARLES FRANCIS ADAMS
WILMAN EDWARD ADAMS
ROGER AMORY
HENRY NATHANIEL ANDREWS
ROBERT BALDWIN
ARTHUR ATWOOD BALLANTINE
GEORGE LOUIS BARNES
THOMAS PRINCE BEAL
FARWELL GREGG BEMIS
SAMUEL BRUCE BLACK
HENRY GODDARD BRADLEE
GEORGE ARTHUR BURNHAM
GODFREY LOWELL CABOT
PAUL CODMAN CABOT
WINTHROP L. CARTER
WALTER CHANNING
WILLIAM CONVERSE CHICK
EVERETT AVERY CHURCHILL
PAUL FOSTER CLARK
SEARS B. CONDIT
ALBERT MORTON CREIGHTON
EDWARD DANA
EDWARD DANE
WILLIAM JAMES DAVIDSON
PAUL AUGUSTUS DRAPER
CHARLES FRANCIS EATON
WILLIAM PARTRIDGE ELLISON
JOSEPH BUELL ELY
JOHN WELLS FARLEY
FREDERIC HAROLD FAY
ALLAN FORBES
ERNEST BIGELOW FREEMAN
EDWARD J. FROST
FRANKLIN WILE GANSE
HARVEY DOW GIBSON
MERRILL GRISWOLD
HENRY INGRAHAM HARRIMAN
CHANDLER HOVEY
WESTON HOWLAND
HOWARD MUNSON HUBBARD
MAYNARD HUTCHINSON
ARTHUR STODDARD JOHNSON
HARRY HAMILTON KERR
FRANK HOWARD LAHEY

HALFDAN LEE
EDWARD ABBOTT MACMASTER
JOHN RUSSELL MACOMBER
GEORGE ARTHUR MALLION
JOSEPH PATRICK MANNING
ALBERT EDWARD MARSHALL
HAROLD FRANCIS MASON
JAMES FRANKLIN McELWAIN
HUGH DEAN McLELLAN
FRED LESTER MORGAN
IRVING EDWIN MOULTROP
CLARENCE LUCIAN NEWTON
SAMUEL NORWICH
OLAF OLSEN
AUGUSTIN HAMILTON PARKER, JR.
GEORGE EDWIN PIERCE
ROGER PIERCE
MATTHEW POROSKY
FREDERICK SANFORD PRATT
ROGER PRESTON
HARRY WENDELL PROUT
SIDNEY RABINOVITZ
STUART CRAIG RAND
WILLIAM MCNEAR RAND
JAMES LORIN RICHARDS
JOHN JAMES ROBINSON
CHARLES MILTON ROGERSON
ROBERT BILLINGS RUGG
LEVERETT SALTONSTALL
RUSSELL MARYLAND SANDERS
ANDREW SEBASTIAN SEILER
FRANK PALMER SPEARE
RUSSELL HENRY STAFFORD
FRANCIS ROBERT CARNEGIE STEELE
CHARLES SIETSON
EARL PLACE STEVENSON
ROBERT TREAT PAINE STORER
FRANK HORACE STUART
EDWARD WATSON SUPPLE
RALPH EMERSON THOMPSON
JAMES VINCENT TONER
ELIOT WADSWORTH
EUSTIS WALCOTT
EDWIN SIBLEY WEBSTER
SINCLAIR WEEKS

Northeastern University

GENERAL UNIVERSITY COMMITTEES

EXECUTIVE COUNCIL

CARL STEPHENS ELL, *Chairman*

EVERETT AVERY CHURCHILL

GALEN DAVID LIGHT

UNIVERSITY CABINET

CARL STEPHENS ELL, *Chairman*

ROBERT BRUCE

EVERETT AVERY CHURCHILL

CHARLES WILLIAM HAVICE

ASA SMALLIDGE KNOWLES

WILFRED STANLEY LAKE

JAMES WALLACE LEES

GALEN DAVID LIGHT

HAROLD WESLEY MELVIN

WINTHROP ELIOT NIGHTINGALE

RUDOLF OSCAR OBERG

EDWARD SNOW PARSONS

JOHN BUTLER PUGSLEY

CHARLES HENRY SAMPSON

MILTON JOHN SCHLAGENHAUF

SYDNEY KENNETH SKOLFIELD

J. KENNETH STEVENSON

WILLIAM CROMBIE WHITE

RUSSELL WHITNEY

LIBRARY COMMITTEE

EVERETT AVERY CHURCHILL, *Chairman*

ROBERT BRUCE

WILFRED STANLEY LAKE

MYRA EDNA WHITE

WILLIAM CROMBIE WHITE

RUSSELL WHITNEY

General Statement

NORTHEASTERN University is incorporated as a philanthropic institution under the General Laws of Massachusetts. The State Legislature, by special enactment, has given the University general degree granting powers.

The Corporation of Northeastern University consists of men who occupy responsible positions in business and the professions. This Corporation elects from its membership a Board of Trustees in whom the control of the institution is vested. The Board of Trustees has four standing committees: (a) an Executive Committee which serves as an Ad Interim committee between the regular meetings of the Board of Trustees and has general supervision of the financial and educational policies of the University; (b) a Committee on Buildings which has general supervision over the building needs of the University; (c) a Committee on Funds and Investments which has the responsibility of administering the funds of the University; (d) a Development Committee which is concerned with furthering the development plans of the University.

Founded in 1898, Northeastern University, from the outset, had as its dominant purpose the discovery of human and social needs and the meeting of these needs in distinctive and highly serviceable ways. While subscribing to the most progressive educational thought and practice, the University has not duplicated the programs of other institutions but has sought "to bring education more directly into the service of human needs."

With respect to program, Northeastern has limited itself:

- To offering, in its several schools, basic curricula from which non-essentials have been eliminated;
- To effective teaching;
- To advising and guiding students;
- To giving students the chance to build well-rounded personalities through a balanced program of extra-curricular activities.

The Northeastern Plan of Education is especially designed for the student who must earn while he learns. In the main, it consists of two definite types of education.

- Co-operative Education by Day,
- Adult Education by Night.

The plan has been developed in such a way that experience in jobs with pay is utilized to help students of limited financial resources secure an education and at the same time gain the maximum educational benefit from their practical experience. So far as the New England States are concerned, Northeastern University is the only institution whose day colleges, other than the School of Law, are conducted under the Co-operative Plan.

The several schools and programs of the University are conducted either under the name "Northeastern University" or by its affiliated schools, the Lincoln Schools and The Huntington Day School for Boys. The following is a brief outline of the principal types of educational opportunities offered.

1. In the field of Co-operative Education there are three day colleges — the College of Liberal Arts, the College of Engineering, and the College of Business Administration. The College of Liberal Arts offers majors in the usual fields of the arts and the sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. The College of Engineering, one of the largest engineering colleges in the United States, has curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. The College of Business Administration has curricula in Accounting, Marketing and Advertising, and Industrial Administration. The College of Engineering and the College of Business Administration confer the degree of Bachelor of Science with specification indicating the field of specialization. The Co-operative Plan under which all of these day colleges operate enables the student to alternate regular periods of classroom instruction with supervised employment in an industrial or commercial position, thus combining theory and practice in an exceedingly effective manner. Apart from the educational advantages of the Co-operative Plan is the opportunity for self-support while the student is pursuing his studies at Northeastern University. During the co-operative periods, students not only gain experience but are also paid for their services. Approximately three hundred business and industrial concerns co-operate with Northeastern University in making this program effective.
2. The School of Law conducts both a day and an evening undergraduate program which prepares for admission to the bar and for the practice of the law and leads to the degree of Bachelor of Laws.
3. The Adult Education Program has been developed in the evening work of the School of Law as indicated above, in the School of Business, and in the evening courses of the College of Liberal Arts. The School of Business has curricula in Management, Accounting, and Engineering and Business. This School awards the Bachelor of Business Administration degree with specification. A division of the School of Business is also conducted in Springfield with curricula in Accounting, Management, and Engineering and Business, leading to the Bachelor of Business Administration degree. The College of Liberal Arts offers certain of its courses during evening hours constituting a program, three years in length, equivalent in hours to one-half the requirements for the A.B. or S.B. degree and providing a general education and preparation for admission to the School of Law. The degree of Associate in Arts is conferred upon those who complete this program.

4. The Adult Education Program has also been developed through the Lincoln Schools, which are affiliated with and conducted by Northeastern University. The classes in these schools are held at convenient evening hours. The Lincoln Technical Institute offers curricula upon a college level in various phases of engineering leading to the degree of Associate in Engineering; whereas the Lincoln Preparatory School, accredited by the New England College Admissions Board, prepares students for admission to college and offers other standard high school programs.
5. The Huntington Day School for Boys, also affiliated with and conducted by Northeastern University, is the outgrowth of a demand in the city of Boston for an urban preparatory school with high educational standards which would furnish thorough preparation for admission to the leading colleges and universities. While easily accessible to the various sections of Boston and to the suburbs, it has the facilities of a country day school and offers a country day school program. This School is one of the leading preparatory schools of the country.

Location of University Buildings

Northeastern University is located in Boston, a city which is rich in educational and cultural opportunities. The University center is on Huntington Avenue just beyond Massachusetts Avenue and opposite the Boston Opera House. Here on an eight acre campus are located the educational buildings of the University except that of the School of Law. Evening classes for the College of Liberal Arts are held at the University center on Huntington Avenue.

Richards Hall

Richards Hall at 360 Huntington Avenue contains over one hundred thousand square feet of floor space devoted to administrative and instructional purposes. On the first floor are the general administrative offices of the University. The University bookstore, the "Husky Hut" and the student checkroom are located on the ground floor. There are three large lecture halls and numerous classrooms and laboratories. The office of the Director of the evening courses of the College of Liberal Arts is located on the first floor of this building.

New Building

This building contains forty-two thousand square feet of floor space. Here are located the Chemical Engineering and Biological laboratories, a large commons room open to day and evening students, and eighteen classrooms and lecture halls.

East Building

This building contains the general University library, classrooms, and certain laboratories.

South Building

The South Building of the University contains certain laboratories, a large lecture hall, and several classrooms.

Beacon Hill Building

The Beacon Hill Building, located at 47 Mt. Vernon Street, within a few minutes' walk of the State House, and occupied exclusively by the Law School, contains administrative offices, a library, classrooms, student lounges, and other facilities.

Transportation

The University center is easily reached from the various railroad stations and from all points on the Boston Elevated System. The new Huntington Avenue Subway comes to the surface at the University center. Ample parking space is available for the use of students coming by automobile.



A quiet corner in the new Library

College of Liberal Arts

EVENING COURSES

OFFICERS OF ADMINISTRATION

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D.
President of the University

FRANK PALMER SPEARE, M.H., LL.D.
President Emeritus

EVERETT AVERY CHURCHILL, A.B., Ed.D.
Vice-President of the University

GALEN DAVID LIGHT, A.B.
Secretary-Treasurer of the University

WILFRED STANLEY LAKE, A.B., M.A., Ph.D.
Dean

RUSSELL WHITNEY, B.S., LL.B.
Acting Director of the Evening Courses

J. KENNETH STEVENSON, B.C.S.
Assistant to the Vice-President

MILTON JOHN SCHLAGENHAUF, A.B., B.D., M.A.
Director of Admissions

FRANK GIVEN AVERILL, A.B.
Director of the Development Program

CHAIRMEN OF INSTRUCTIONAL DEPARTMENTS

CHARLES FREDERICK BARNASON, A.B., A.M., Ph.D.
Professor of Modern Languages
Res. 122 Downer Ave., Hingham

STANLEY GODDARD ESTES, A.B., M.A., Ph.D.
Professor of Psychology
Res. 60 Pinckney St., Boston

ROGER STANTON HAMILTON, A.B., M.A., Ph.D.
Professor of Economics
Res. 1367 Walnut St., Newton Highlands

CHARLES WILLIAM HAVICE, A.B., M.A., S.T.B., Ph.D.
Professor of Sociology
Res. 83 Franklin St., South Braintree

FREDERICK WILLIAM HOLMES, A.B., M.A.
Professor of English
Res. 43 Lincoln Street, Dedham

STANLEY DEMETRIUS MIROYIANNIS, S.B., M.A., Ph.D.
 Professor of Biology
 Res. 8 Cumberland St., Boston

CARL FREDERICK MUCKENHOUP, A.B., S.B., Ph.D.
 Professor of Physics
 Res. 332 Winchester St., Newton Highlands

JOSEPH SPEAR, A.B., M.A.
 Professor of Mathematics
 Res. 31 Matchett St., Brighton

ARTHUR ANDREW VERNON, S.B., M.S., Ph.D.
 Professor of Chemistry
 Res. 14 Standish St., Newton Highlands

INSTRUCTORS

Economics

NORMAN GREENE, B.Sc. in Ed.

English

WILLIAM J. SANDS, A.B., A.M. in Ed.

History and Government

SAUL E. JOFTES, A.M., LL.B., LL.M.
 JOSEPH SKINNER, A.B., M.A., Ph.D.

Mathematics

SAMUEL ARTHUR STONE, S.B., M.S.
 HAROLD STEVENS, B.Sc.

Psychology

LYNE S. FEW, A.B., A.M.
 EVERETT W. STEPHENS, A.B., A.M.

Sociology

THOMAS AUSTIN BRIDGES, B.S., A.M., S.T.B.

Survey of Physical Sciences

DUNCAN MACDONALD, S.B., M.A.

MYRA EDNA WHITE
Librarian

MARY B. FOOR
Manager of the Bookstore

BARBARA RUTH TONDER
Secretary to the Director

THE COLLEGE OF LIBERAL ARTS

Evening Courses

STATEMENT OF PURPOSE

The College of Liberal Arts through its evening courses offers a program in general education and a special pre-legal program preparing for admission to Northeastern University School of Law.

By conducting its classes at convenient evening hours, it gives high school graduates who are obliged to seek work immediately upon graduation an opportunity to continue their education. In general those who seek admission to the evening classes of the College of Liberal Arts are divided into two groups.

The first group is composed of those who wish to continue their education along cultural lines. The second group is composed of those who wish to prepare for admission to the School of Law. Under the rules of the Supreme Judicial Court in relation to the admission of attorneys in Massachusetts, an applicant is required to complete one-half of the work acceptable for a bachelor's degree in an approved college or university before he begins the study of law. The evening pre-legal program of the College of Liberal Arts is especially designed for those who wish to prepare for admission to either the day or evening division of the Northeastern University School of Law.

Increasingly the value of a broad cultural education is being realized. This is recognized in the pre-legal study required before admission to law school in nearly all states. It is also recognized in newly required courses of a cultural nature for accounting and engineering training. This cultural education is obtainable either before or after the completion of one's specific vocational training. Not only is a cultural education valuable in and of itself, but from a strictly vocational point of view it is highly important, the broadly educated man or woman in many instances having a distinct advantage so far as vocational advancement is concerned.

REQUIREMENTS FOR THE DEGREE OF ASSOCIATE IN ARTS

Each evening course meets the same academic standards and carries the same semester hour credit as the corresponding course in the day program of the College of Liberal Arts. The courses, however, have been carefully selected to meet the needs of evening students.

The following requirements must be fulfilled by candidates for the degree of Associate in Arts:

1. A candidate must complete a total of not less than sixty-eight semester hours of academic work with a degree of proficiency acceptable to the faculty.
2. A candidate must meet through his program of studies the minimum course requirements listed below:

	Semester Hours Required
Economics	4
English	14
Government	6
History	8
Psychology or Sociology	4
Science	8
Other Courses	24
	—
Total	68

3. A candidate for the degree of Associate in Arts who is preparing for admission to Northeastern University School of Law must complete all the required courses listed in the pre-legal program totaling sixty semester hours and in addition eight semester hours in other courses.

The above requirements may be met by class attendance three nights a week, forty weeks each year for the three years except that in the first semester of the third year it will be necessary to attend class four nights a week. In some cases it may be advisable for the best interest of the student to take more than three years to complete this program.

REQUIREMENTS FOR A.B. OR S.B. DEGREE

Any student who completes the requirements for the Associate in Arts degree and who also meets the requirements for admission to the Day College may become a candidate for a bachelor's degree in the College of Liberal Arts by completing an additional sixty-seven semester hours of work and by meeting major, minor and language requirements in the Day College.

ADMISSION REQUIREMENTS

Applicants for admission to the evening courses as candidates for the degree of Associate in Arts must qualify by one of the following methods:

1. Graduation from an approved course of study in an accredited secondary school.
2. Completion of fifteen secondary school units with a degree of proficiency satisfactory to the Department of Admissions.

Applicants who later desire to qualify for the A.B. or S.B. degree must have included in their secondary school course the prescribed subjects in either Group A or Group B.

Group A		Group B	
English	3	English	3
*Foreign Language (Ancient or Modern)	3 or 4	Mathematics	2 or 3
Social Sciences	2	Natural Sciences	1
**Electives	6 or 7	**Electives	8 or 9
Total	15	Total	15

*One year of a foreign language is not accepted. Therefore, this requirement may consist either of three years of one language or two years of each of two languages.

**Not less than four of the "electives" must be in one or more of the following academic branches: Languages, Natural Sciences, Mathematics, Social Sciences, History.

GENERAL INFORMATION

Advanced Standing

Students transferring from approved colleges will be admitted to advanced standing provided their records warrant it. Whenever a student enters with advanced standing and later proves to have inadequate preparation in any of his prerequisite subjects, the faculty reserves the right to require the student to make up such deficiencies.

Application for Admission

The college year begins in September. Students are also admitted at the beginning of the second and third semesters to courses for which they have the required background.

Each applicant for admission is required to file an application blank setting forth his previous education and the name of one person to whom reference may be made concerning his character and previous training.

Inside the back cover of this catalogue is an application blank. It should be filled out in ink and forwarded to the Director of the Evening Courses of the College of Liberal Arts, Northeastern University, 360 Huntington Avenue, Boston, Massachusetts. Upon receipt of the application, the Director obtains the previous school records, the statement from the reference, and after considering these, informs the applicant as to his eligibility for admission.

Applications should be filed preferably before the registration period, thus allowing time to determine eligibility for admission and to adjust any schedule problems before the opening night. Applicants are urged to visit the school for a personal interview if it is possible for them to do so.

Applicants seeking advanced standing should arrange to have transcripts of their previous college records forwarded with their application.

Registration

The filing of the application for admission does not constitute registration. All students are required to register at the college and arrange for the payment of their tuition during the registration period. (See calendar, p. 4.)

Attendance and Examinations

Attendance is required of all students at recitations and lectures continuously throughout the academic year.

Regular final examinations are held at the close of each course.

No student will be permitted to take a final examination in a course who has been present at less than seventy per cent of the lectures. To be entitled to attendance credit a student must be present at least one hour in a one and one-half hour lecture.

Make-up examinations are scheduled in March and September of each year. (See calendar, p. 4.) Unsatisfactory and incomplete grades must be removed not later than the next school year following that in which they were received.

Grades

The work of each student shall be graded upon examinations according to the following scale:

- | | |
|----------------------------------|----------------|
| A Superior | } Honor Grades |
| B Above average | |
| C Average | |
| D Lowest passing grade | |
| E Unsatisfactory* | |
| F Failure** | |
| I Incomplete — no examination*** | |

* An unsatisfactory grade may be made up by taking the make-up examination and obtaining a satisfactory grade.

** A failure may be made up only by repeating the course in its entirety and obtaining a satisfactory grade.

*** An incomplete grade may be made up by taking the next make-up or regular examination.

Honor List

The Honor List, issued at the end of each semester, contains the names of all students taking a full program who have an honor grade average in all subjects with no grade below "C" in any subject.

Scholarships

Partial tuition scholarships are awarded annually to the two highest ranking students of the freshman and middler classes. These awards are made during the summer and are based on the record made during the previous school year.

Freshman Class — One \$80.00 scholarship is awarded to the highest ranking student.

One \$40.00 scholarship is awarded to the second highest ranking student.

Middler Class — Similar awards are made to the two highest ranking students.

In order to be eligible for these awards, students must fulfill the following conditions:

1. They must be carrying a full program — not less than twenty semester hours.
2. They must register for a full program in the fall succeeding the award.

TUITION AND FEES

Application Fee

An application fee of \$5.00 is required when the application for admission is filed. This fee is not refundable.

Tuition

A full-year program for 1943-1944 will consist of twenty-four semester hours and all students carrying such a program are charged \$160 which is payable in four installments. The first installment is \$35 and is due on Tuesday, September 7. The remaining installments are due as follows: \$45, November 29; \$40, February 14; \$40, May 1. Students carrying less than a full program of twenty-four semester hours are charged at the rate of \$8 per semester hour.

University Fee

All students enrolled in any school of the University are charged a University Fee which is based on the number of semester hours for which the student is enrolled. The charge is fifty cents per semester hour of class work, not to exceed \$10 in any one year. This fee covers in part library costs, general material costs, general university service charges and similar items for which separate fees are frequently charged by other colleges and universities. For students enrolled for programs extending over the full year this fee is payable one-half with the September tuition payment and one-half with the February tuition payment. In the case of students enrolled for single courses the fee is payable at the beginning of the course.

Late Payment Fee

Students who do not pay their quarterly tuition bills during the week when they are due must pay a late payment fee of \$1.25. This is a fixed fee and does not vary with the amount of the tuition bill.

Examination Fees

A fee of \$2.00 is charged for each make-up examination taken by a student.

Graduation Fee

A graduation fee of \$5.00 is charged each student during the senior year. This fee is payable with the fourth installment of tuition on May 3.

Payments

Checks or money orders should be drawn payable to Northeastern University.

Withdrawals and Refunds

In the event a student is obliged to withdraw from the school for causes deemed adequate by the Committee on Administration, the unused tuition may be refunded in accordance with the regulations governing refunds.

DESCRIPTION OF COURSES

Not all courses are offered every year. For courses available in 1943-1944, please consult the Evening Division Office.

The University reserves the right to withdraw any course in which there are less than eight enrollments.

ECONOMICS

Ec 3 Economic Principles

A thorough grounding in the fundamental principles and laws of economics is the aim of this basic course. The main topics include the nature and organization of production, the nature and importance of wants, the relation of money and prices, the process of exchange, and the nature of international trade. 2 semester hour credits

Ec 4 Economic Principles

A continuation of Ec 3. A careful analysis is made of the determination of price under conditions of competition and monopoly, and of the distribution of wealth and income in the form of wages, economic rent, interest, and profits. The elements of insurance are discussed in connection with profits.

Preparation: Ec 3

2 semester hour credits

Ec 12 Economic Systems

After developing various criteria for evaluating the different economic systems, the course proceeds to a comparative analysis of capitalism, co-operation, socialism, communism, and fascism. The problems of economic planning receive particular attention.

Preparation: Ec 3, Ec 4

2 semester hour credits

ENGLISH

E 1-A English I

The aim of this course is to help the student attain competence in the understanding and evaluating of modern literature and in written expression. It includes a review of the structural essentials of the English language, various written assignments, and the study of essays and informational articles.

3 semester hour credits

E 2-A English I

Continuing the general purposes of E 1-A, this course proceeds to a study of the special problems of description and narration, and to a critical reading of poems, short stories, and plays.

3 semester hour credits

E 5 Advanced Composition

The technique of writing in the shorter literary form will be studied in detail and applied systematically toward the building up of the student's individual style. A part of the time each week will be devoted to personal conference between the student and the instructor.

Preparation: E 1-A, E 2-A

2 semester hour credits

E 6 Advanced Composition

The continuation of the technique of writing and the building up of an individual style for the student.

Preparation: E 5

2 semester hour credits

E 13 Effective Speaking

This course offers practical training in the preparation and presentation of the various types of speeches. The instruction is planned to eliminate defects of voice, posture, and delivery, and to develop in the student an ability to speak easily, naturally, and forcefully.

1 semester hour credit

E 14 Effective Speaking

Continued practice in impromptu and extempore speaking, organization of material, consideration of the audience, and vocabulary building form the basis of the course.

Preparation: E 13

1 semester hour credit

E 15 Survey of English Literature

A survey of English literature to 1800. After a brief study of the social and political background of each literary period, the writing of the period is considered, and the more important writers are studied and read in detail. The purpose of the course is to give the student an appreciation of English literature as a whole, and an intimate knowledge of its major figures.

3 semester hour credits

E 16 Survey of English Literature

A survey of English literature from 1800 to the present century. The outstanding writers are read, studied, and related to the general background of nineteenth-century England. The purpose of the course is to give the student an understanding of the writers who contributed most to the formation and development of modern literature in England.

3 semester hour credits

E 25 American Literature to 1860

A survey of American literature from colonial times to the triumph of the transcendental movement in New England. The work of Bryant, Irving, Cooper, Poe, Emerson, Thoreau, Lowell, Holmes, Longfellow, and Melville will be emphasized.

2 semester hour credits

E 26 American Literature After 1860

Continuing E 25, the course will consider the rise of realism after the Civil War, the development of American humor, the appearance of local color writers, and modern trends since 1900.

2 semester hour credits

GOVERNMENT**Gv 1 American Government and Politics**

The study of our National Government with respect to its organization and function; its powers and limitations under the Constitution; its legislative, administrative, and judicial machinery under the party system of government and bureaucracy.

3 semester hour credits

Gv 2 American Government and Politics

A more detailed study of the relationships of our federal, state, and municipal governments, including an analysis and comparison of the various state governments and types of municipal government with respect to state and local agencies for carrying out the executive, legislative, and judicial functions of government in a democratic country.

3 semester hour credits

Gv 3 Comparative Government

The older governments of Europe, those principally of Great Britain and France, but also of Switzerland and the Scandinavian countries, are described and analyzed in this course. Institutions are compared in these various states with reference to America and the newer governments of Europe.

2 semester hour credits

Gv 4 Comparative Government

A study of the newer governments of Europe, as found in Germany, Italy, and the Soviet Union. Democracy and dictatorship are analyzed as different modes of life and rule. These states are compared to each other, to the older governments of Europe, and to the United States.

2 semester hour credits

HISTORY**H 1 History of Civilization**

This is primarily a background course. Introductory lectures deal with primitive society, the development of language and writing, and the early contributions of Egypt and Asia. More detail is given to the structure of Greek and Roman society, the rise of the Christian Church, the barbarian invasions of the Empire, the growth of Islam, and the life of the early Middle Ages.

4 semester hour credits

H 2 History of Civilization

This course deals with the growth of the monarchies in Europe, the medieval Church, the art and literature of the Renaissance and Reformation, the economic revolution, the Age of Reason in France and England, the Old Regime and the Revolution in France, and the growth of science and industrialism.

As in H 1, the emphasis is upon the cultural rather than the political history of Europe.

4 semester hour credits

H 9 The United States to 1865

This course is an interpretation of the events which shaped the American nation to the Civil War. Social customs, economic influences, racial contributions, and humanitarian movements are not neglected, though the political history is stressed.

2 semester hour credits

H 10 The United States Since 1865

Major attention is given to the social, economic, and political foundations of recent history in this survey of the transition of America from an agricultural to an urban industrialized society since the Civil War. Consideration is given to the problems arising with the emergence of America as a world power.

2 semester hour credits

H 13 English Constitutional History

This course is devoted to a consideration of the English constitution and of the common law; local government vs. central government; the origin and growth of Parliament; the development of the British cabinet system; and a comprehensive study of statutes and documents.

3 semester hour credits

H 14 American Constitutional History

In this course a study is made of the historical development of the United States Constitution with particular emphasis on its progressive adaptation to a changing social and economic order.

3 semester hour credits

PHYSICS**P 1-A Survey of the Physical Sciences**

The purpose of the course is to give a definite conception of the physical world to those students who ordinarily would not elect a science course but who need to know something about the contributions and the place of the physical sciences in contemporary civilization. This course begins with a study of the universe and solar system. Consideration is given to the principles of distance, mass and weight, and the simple dynamics of bodies. The earth is studied from the viewpoint of its geological, meteorological, and chemical aspects, these main fields introducing a non-mathematical discussion of magnetism, heat, and electricity.

4 semester hour credits

P 2-A Survey of the Physical Sciences

In this course, which continues P 1-A, the phenomena of light are taken up. Following this, consideration is given to spectroscopy and matter structure, the periodic table, acids, bases, salts, and organic compounds. The course concludes with a discussion of certain aspects of physics which are of practical importance in the household, such as heating, lighting, refrigeration, and electrical appliances.

4 semester hour credits

PSYCHOLOGY

Ps 1 Introduction to Differential Psychology

An elementary survey of the psychology of individual differences including personality differences, together with a presentation of some of the practical applications of the findings of differential psychology.

2 semester hour credits

Ps 2 General Psychology

An introduction to general experimental psychology. The topics considered include learning, memory, thought, imagination, motivation, emotion, sensation, and perception.

Preparation: Ps 1

2 semester hour credits

Ps 9 Psychology of Personality

Presents a survey of historical and contemporary theories of the nature of personality. The problems of the generality of traits, the consistency of expression, and the relation of cultural factors to personality, growth, and integration will be discussed.

Preparation: Ps 2

2 semester hour credits

Ps 10 Abnormal Psychology

An introduction to the field of psychopathology. The psychology of the neuroses and the minor disturbances of everyday life are emphasized. Interpretation of clinical findings in the light of some contemporary schools of psychology is included.

Preparation: Ps 9

2 semester hour credits

Ps 11 Applied Psychology

Methods of personality study: a survey and evaluation of procedures used in the study of personality in schools, clinics and business and industrial personnel departments.

Preparation: Ps 9

2 semester hour credits

SOCIOLOGY

S 1 Introduction to Sociology

In presenting a survey of the origins and sources of human society, this study provides orientation for the courses in principles and problems which follow. The several theories of organic evolution are discussed. The antiquity of man and basic anthropological data are considered. The racial and ethnic groupings of man are then studied in the light of biological, geographical, and cultural factors.

2 semester hour credits

S 2 Principles of Sociology

Facts and principles basic to a general knowledge of the field of sociology are presented. The origins, forms, and forces of human associations are discussed. Consideration is given the several leading schools of sociological thought. The course is designed to meet the needs of the student who desires only an elementary survey of the subject, as well as the student who plans to take advanced courses in social science.

2 semester hour credits

S 3 Social Problems

Attention is given the nature, complex causation, and interrelatedness of social problems in general. Cultural change, with its attendant lags, as well as other social forces and conflicts are studied. While sociological theory is occasionally introduced to clarify the problem at hand, the course is essentially practical in character. Such problems as poverty and unemployment, race antagonisms, population pressures, and the broken home are considered. Optional field trips to various institutions give concreteness to the problems studied.

Preparation: S 1, S 2

2 semester hour credits

S 4 Social Pathology

Similar to the course in Social Problems in background and approach, this study deals with the maladjustments and ills of human society. Emphasis is given those pathological conditions which exist in relations between the individual and the group. Typical subjects presented include mental defectiveness and disease, alcoholism and drug addiction, suicide, delinquency and crime, and pathologies of domestic relations. The field trips arranged for this course add to the practical knowledge of the social ills which are studied.

Preparation: S 1, S 2

2 semester hour credits

S 7 Principles of Social Ethics

To clarify the meaning of morality in social relations is the aim of this study. Right and wrong conduct is analyzed in the light of the highest values for human society. Moral laws are discussed, and the various systems of ethics are evaluated. Scientific attitudes are encouraged in order that one's moral judgments may be compatible with one's best reflective thought.

Preparation: S 1, S 2

2 semester hour credits

NORTHEASTERN UNIVERSITY

COEDUCATIONAL

College of Liberal Arts

Offers a broad program of college subjects serving as a foundation for the understanding of modern culture, social relations, and technical achievement. Varied opportunities available for vocational specialization. Degree: Bachelor of Science or Bachelor of Arts.

College of Engineering

Offers curricula in Civil, Mechanical (with Industrial and Aeronautical options), Electrical, and Chemical Engineering. Classroom study is supplemented by experiment and research in well equipped laboratories. Degree: Bachelor of Science in the professional field of specialization.

College of Business Administration

Offers curricula in Accounting, Marketing and Advertising, and Industrial Administration. Each curriculum represents in itself a broad survey of business technique, differing from the others chiefly in emphasis. Degree: Bachelor of Science in Business Administration.

School of Law

Offers day and evening undergraduate programs admitting those who present a minimum of one-half of the work accepted for a bachelor's degree in an approved college or its full equivalent, each program leading to the degree of Bachelor of Laws. Coeducational.

School of Business

Offers curricula through evening classes leading to the degree of Bachelor of Business Administration with appropriate specification in Accounting, Management, and Engineering and Business. Preparation for C.P.A. examinations. Intensive programs arranged to meet special needs.

Evening Courses of the College of Liberal Arts

Certain courses of the College of Liberal Arts are offered during evening hours in the fields of Economics, English, History, Government, Psychology, and Sociology. A special program preparing for admission to the School of Law is also available. The program is equivalent in hours to one-half the requirement for the A.B. or S.B. degree. Special courses also available. Associate in Arts degree conferred.

The Colleges of Liberal Arts, Engineering, and Business Administration offer day programs and are conducted on the Co-operative Plan. After the freshman year students may alternate their periods of study with periods of work in the employ of business or industrial concerns at ten-week intervals. Under this plan they gain valuable experience and earn a large part of their college expenses.

In addition to the above schools the University has affiliated with it and conducts: the Lincoln Technical Institute offering, through evening classes, courses of college grade in various fields of engineering leading to the degree of Associate in Engineering; and the Lincoln Preparatory School, an accredited evening school preparing for college entrance and offering other standard high school programs.

For further information regarding any of the above schools, address

NORTHEASTERN UNIVERSITY

Law School
47 Mt. Vernon Street

Other Schools
360 Huntington Avenue

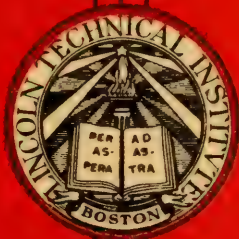
Boston, Massachusetts
Telephone: KENmore 5800



Lincoln Technical Institute

College Courses in Engineering

1943



1944

EVENING SESSIONS

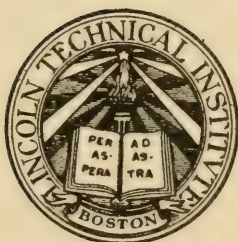
ADMISSION OF WOMEN

Effective with the class entering September 14, 1942, women students were admitted to engineering courses on the same basis as men.

This step was taken to make available to women certain forms of technical training in order that they may play an increasingly important part in the national war effort. Already War industries are calling for women with a knowledge of elementary and advanced Mathematics, Physics, Engineering Drafting, Mechanism, Chemistry, and many other subjects, not only to add to the available supply of labor but to take the place of men who are to be moved to other positions. In this way the total labor power of the country will be used.

LINCOLN TECHNICAL INSTITUTE

Evening Engineering Courses of College Grade



1943-1944

The Institute is situated at the entrance to the
Huntington Avenue subway within nine minutes
of Park Street and easily accessible from all points.

The Lincoln Technical Institute offers courses in Engineering leading to the Degree of Associate in Engineering which, through cooperation with Northeastern University Evening School of Business, carry credit toward the Degree of Bachelor of Business Administration in Engineering and Management awarded by Northeastern University.



Lincoln Technical Institute

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MAYNARD HUTCHINSON
ARTHUR STODDARD JOHNSON
IRVING EDWIN MOULTROP
AUGUSTIN HAMILTON PARKER, JR.
FREDERICK SANFORD PRATT
ROGER PRESTON
STUART CRAIG RAND
JAMES LORIN RICHARDS
CHARLES MILTON ROGERSON
LEVERETT SALTONSTALL
FRANK PALMER SPEARE
FRANCIS ROBERT CARNEGIE STEELE
CHARLES STETSON
EARL PLACE STEVENSON
ROBERT TREAT PAINE STORER
EDWARD WATSON SUPPLE

Officers of Administration

CARL STEPHENS ELL, A.B., M.S., Ed.M., Sc.D.

President

FRANK PALMER SPEARE, M.H., LL.D.

President Emeritus

EVERETT AVERY CHURCHILL, A.B., Ed.D.

Vice-President

GALEN DAVID LIGHT, A.B.

Treasurer

JAMES WALLACE LEES, A.M.

Dean

WILLIAM GREENE WILKINSON, A.B., Ed.M.

Assistant to the Dean

JOHN MOORE TROUT, JR., A.B., Ed.M.

Counsellor for Students

CALENDAR

	1943
Registration Period	SEPTEMBER 1-11
Advanced Standing and Condition Examinations	SEPTEMBER 3
Classes Begin	SEPTEMBER 13
Legal Holiday. No Classes	OCTOBER 12
Legal Holiday. No Classes	NOVEMBER 11
Thanksgiving Recess. No Classes	NOVEMBER 24-25
Final Class Session before Christmas Recess	DECEMBER 23
	1944
First Class Session after Christmas Recess	JANUARY 3
Division B Classes Begin	JANUARY 10
Legal Holiday. No Classes	FEBRUARY 22
Legal Holiday. No Classes	APRIL 19
Summer Term Classes Begin	JUNE 5
Commencement	JUNE 14

OFFICE HOURS

AUGUST 16, 1943 — JUNE 10, 1944

Week days, except Saturday.....	9 a.m. till 8:30 p.m.
Saturday	9 a.m. till 1 p.m.

JUNE 12, 1944 — AUGUST 12, 1944

Monday, Wednesday, and Thursday.....	9 a.m. till 5 p.m.
Tuesday and Friday.....	{ 9 a.m. till 5 p.m.
	{ 6 p.m. till 8 p.m.
Saturday	9 a.m. till 12m.

INTERVIEWS

Prospective students, or those desiring advice or guidance with regard to any part of the school work or curricula, are offered personal interviews with the Dean or his assistants. No enquirer should hesitate to ask for an appointment as, in the long run, time is saved during the school year by having the whole educational problem discussed before the opening of the school.

Faculty

CHARLES O. BAIRD, JR.

Appointed 1936

B.S. Northeastern University, 1934; M.S. Harvard University Graduate School of Engineering, 1942; Instructor, Northeastern Polytechnic School, 1922-31; Member of Boston Society of Civil Engineers; Member of New England Water Works Association; Member of New England Sewage Works Association; Associate Member of the American Society of Civil Engineers; Associate Professor of Civil Engineering, Northeastern University, 1922—.

Surveying

WALTER ALFRED BALDWIN

Appointed 1931

A.B. Ohio Wesleyan University, 1906; Graduate Study, University of Chicago and Harvard University; Head, Department of Mathematics, Chillicothe High School, Ohio, 1906-8; Head, Department of Mathematics, Mansfield High School, Ohio, 1908-10; Head, Science Department, Huntington School for Boys, Boston, 1912-14; Instructor in Physics and Chemistry, Lincoln Preparatory School, 1910—. Investigator and Consultant.

Chemistry

Chairman of the Department of Chemistry

EARL KENNETH BOWEN

Appointed 1941

B.S. Massachusetts State College, 1940; Graduate Study, Boston University, 1941-1943, Member of Association of Teachers of Mathematics in New England; Instructor in Mathematics, Northeastern University, 1940—.

Engineering Mathematics

RICHARD E. CARVILL

Appointed 1942

B.S. Northeastern University, 1943; Draftsman, J. W. Greer Company, 1939; Draftsman, Warren Steam Pump Company, 1939-42; Assistant to the Mechanical Engineer, Jackson & Moreland, 1942—.

Heat Engineering

RICHARD F. CLARK

Appointed 1941

B.S. University of New Hampshire, 1938; Application Engineer, Westinghouse Electric and Manufacturing Company, Boston, 1938—.

Electricity II

LAURENCE FULLER CLEVELAND

Appointed 1931

B.S. Worcester Polytechnic Institute, 1929; M.S. Massachusetts Institute of Technology, 1935; Member of the Society for the Promotion of Engineering Education; Member of the American Institute of Electrical Engineers; Member of the New England Society of Mechanical Drawing Teachers; Member of the Illuminating Engineering Society; Associate Professor of Electrical Engineering, Northeastern University, 1929—.

Machine Drawing

Chairman of the Department of Drawing

EDWARD MARKS COOK

Appointed 1941

A.B. Harvard University, 1935; Graduate Study, Harvard University, Boston University, Northeastern University; Member of American Astronomical Society; Member of Association of Teachers of Mathematics in New England; Instructor in Mathematics, Peddie School, Hightstown, New Jersey, 1936-38; Instructor in Mathematics, Northeastern University, 1938—.

Engineering Mathematics

MICHAEL D'AMELIO

Appointed 1942

A.B. Harvard College, 1922; Instructor, Brookline High School, 1922-26; Instructor, Boston Latin School, 1926-27; Instructor in Mathematics, English High School, 1927—.

Engineering Mathematics

ALEXANDER BARRETT DAYTZ

Appointed 1931

B.S. Massachusetts Institute of Technology, 1928; Phoenix Bridge Co., 1928-29; Bridge Designer, Boston and Maine Railroad Company, 1929-30; Assistant Structural Engineer, Boston Transit Department, 1930-32; Assistant at Massachusetts Institute of Technology, 1932; Massachusetts Metropolitan District Water Supply Commission, 1933-35; Engineer for Metropolitan Sewerage Division, 1936; Associate Member of the American Society of Civil Engineers; Structural Engineer, E. B. Badger and Company, 1937—.

*Engineering Structures, Concrete, Concrete Design,
Hydraulics, Highway Engineering*

WARREN C. DEAN

Appointed 1941

A.B. Boston University, 1931; M.A. Boston University, 1940; Teacher, Peacham Academy, Vermont, 1931-32; Teacher, Chelmsford High School, Massachusetts, 1934-38; Instructor in Mathematics, Northeastern University, 1938—.

Engineering Mathematics

JOHN JAMES DEVINE

Appointed 1939

B.S. Rhode Island State College, 1927; Sc.M. Brown University, 1936; Engineer, New York Telephone Company, 1927-32; Assistant Engineering Instructor, Rhode Island State College, 1934-37; Instructor in Civil Engineering, Northeastern University, 1937-38; Instructor in Drawing, Northeastern University, 1938-41; Assistant Professor of Engineering Drawing, Northeastern University, 1941—.

Engineering Drawing

CHARLES P. ENGELHARDT, JR.

Appointed 1942

B.S. Harvard University, 1928; Master of Architecture, School of Architecture, Harvard University, 1930; Architect and Engineer, 1930-1940; Instructor in Drawing and Mathematics, Northeastern University, 1941—.

Engineering Drawing

MARTIN W. ESSIGMANN

Appointed 1940

B.S. Tufts Engineering School, 1938; Graduate Study, Tufts College and Massachusetts Institute of Technology, 1939—; Associate member of the American Institute of Electrical Engineers; Member of the Society for the Promotion of Engineering Education; Instructor, Electrical Engineering, Northeastern University, 1938—.

Electricity III

ELMER HASKELL EVERETT

Appointed 1935

B.S. Northeastern University, 1934; Graduate Study, Massachusetts Institute of Technology, 1935; M.S. Harvard, 1936; Refrigeration Engineer, Boston Ice Company, 1933-35; Compressor Department, Ingersoll-Rand Company, 1936; Turbine Department, General Electric Company, 1936; Assistant to Research Engineer, Birdseye Laboratories, 1937—.

Mechanism Machine Design

WALTER S. FROST

Appointed 1937

B.S. Tufts College, 1912; Ph.D. Cornell University, 1923; Instructor, Cornell University, 1916-1919; Instructor, West Virginia University, 1920; Assistant Professor, University of New Hampshire, 1920-26; Chemist, Burnham Soluble Iodine Company, 1929—; Assistant Professor, Northeastern University, 1942—.

*Organic Chemistry***ROYAL MERRILL FRYE**

Appointed 1930

A.B. Boston University, 1911; A.M. Boston University, 1912; Ph.D. Boston University, 1934; Instructor in Boston University, 1913-16; Instructor in Department of Physics, Massachusetts Institute of Technology, 1916-31; Instructor in Physics, Worcester Polytechnic Institute, 1926-27; Assistant Professor of Physics, Boston University, 1931-42; Professor of Physics and Chairman of the Department of Physics, Graduate School, Boston University, 1942—.

Physics Advanced Mathematics
Chairman of the Department of Physics

ELMER E. HASKINS

Appointed 1939

B.M.E. Northeastern University, 1925; M.A. University of Pittsburgh, 1930; Ph.D. Boston University, 1938; Instructor, Monongahela High School, Pennsylvania, 1925-30; Associate Professor of Mathematics, Northeastern University, 1930—.

Engineering Mathematics
Chairman of the Department of Mathematics

ROBERT EDGAR HODGDON

Appointed 1927

B.S. University of New Hampshire; M.S. Massachusetts Institute of Technology; Teacher in Mechanical Arts Department, Dover High School, New Hampshire, 1919-20; Teacher of Physics and Mathematics, Concord High School, New Hampshire, 1920-21; Training Assistant, United States Veterans Bureau, 1921-22; Instructor in Physics Department of Massachusetts Institute of Technology, 1922-33; Rindge Technical School, 1933—.

*Engineering Drawing, Physics, Advanced Mathematics, Electricity***C. DAVID JOHNSON**

Appointed 1938

A.B. Clark University, 1915; M.A. Boston University, 1935; Instructor in Physical Training, Clark College, 1912-16; Instructor in Physics, Clark University, 1915-19; Instructor in Physics, Worcester Polytechnic Institute, 1919-20; Instructor in Physics and Acting Head of Department, Simmons College, 1920-21; Instructor in Physics, Tufts College, 1922-29; Assistant Professor of Physics, Northeastern University, 1929—.

*Physics***JOHN J. KERR**

Appointed 1942

B.S. Northeastern University, 1943; Sanborn Company, 1940—.

*Aeronautical Laboratory***HERBERT C. LANG**

Appointed 1936

B.S. Northeastern University, 1934; Draftsman, Mason-Neilan Regulator Company, 1934-1940; Chief Draftsman, Mason-Neilan Regulator Company 1941—.

Machine Drawing

JOHN ROBERT LEIGHTON

Appointed 1915

B.C.E. Northeastern University, 1914; Instructor, Northeastern University, 1914-17; Instructor, Northeastern Polytechnic School, 1915-27; Instructor, Lincoln Technical Institute, 1927—.

Applied Mechanics Strength of Materials

EUGENE H. LORD

Appointed 1942

B.S. University of New Hampshire, 1917; Instructor in Mathematics and Physics, Taunton, Brockton, and Newton High Schools, 1918-29; Instructor in Physics and General Science, Boston Latin School, 1929—.

Physics

ROBERT E. MADSEN

Appointed 1933

B.M.E. Northeastern University, 1931; B.S. Northeastern University, 1933; Graduate Study, Boston University; Member of Massachusetts Schoolmasters Club; Member of Association of Teachers of Mathematics in New England; Member of Mechanical Drawing Association of New England; Instructor, Northeastern University, 1931-34; Instructor, Pond Street High School, Ayer, 1934-35; Maynard High School, 1935-36; Bedford Junior High School, 1936-1941; Socony-Vacuum Oil Company, 1941—.

Engineering Mathematics

HORACE S. MILES

Appointed 1942

B.S. Northeastern University, 1934; Assistant Production Manager, Mason-Neilan Regulator Company, 1934—.

Engineering Drawing

RUSSELL E. MINKWITZ

Appointed 1942

Northeastern University, 1939—; Electrical Laboratory Assistant, Northeastern University, 1942—.

Electrical Laboratory

VINCENT A. NEGRINI, JR.

Appointed 1942

B.S. Northeastern University, 1943; Sanborn Company 1940-42; Holtzer-Cabot Electrical Company, 1942—.

Airplane Design

EUGENE G. PARE

Appointed 1942

B.S. Tufts College, 1937; Ed.M. Tufts College, 1938; Instructor, Wayland High School, 1938-1941, Instructor in Drawing, Northeastern University, 1941—.

Engineering Drawing

HENRY E. RICHARDS

Appointed 1921

B.S. 1918, M.S. 1937, Massachusetts Institute of Technology; Member of American Institute of Electrical Engineers; Member of Society for Promotion of Engineering Education; Ensign U. S. Naval Reserve, 1918; General Electric Company 1919-21; Associate Professor of Electrical Engineering, Northeastern University, 1921—.

Advanced Electrical Laboratory

GUSTAV ROOK

Appointed 1941

B.S. Northeastern University, 1939; Graduate Study, Northeastern University, 1939-1942; Instructor in Engineering and Machine Drawing, Northeastern University, 1939—.

Engineering Drawing

BARNET RUDMAN

Appointed 1942

A.B. Harvard University, 1921; Ed.M. Boston Teachers' College, 1934; Instructor in Mathematics, Rocky Grove High School, Franklin, Pennsylvania, 1921-23; Instructor in Mathematics, Pittsfield High School, 1923-28, Head of the Department of Mathematics, 1927-28; Instructor in Mathematics, South Boston High School, 1929-32; Instructor in Mathematics, English High School, 1932—.

Engineering Mathematics

ALBERT E. SANDERSON, JR.

Appointed 1936

B.C.E. Northeastern University, 1926; B.S. Northeastern University, 1940; Bethlehem Steel Company, 1927-30; Boston Bridge Works, 1930-35; Instructor in Civil Engineering, Northeastern University, 1938—.

Structural Design Structural Drawing

ALBERT KARL SCHMIEDER

Appointed 1941

B.S. Northeastern University, 1941; Instructor in Mechanical Engineering, Northeastern University, 1941—.

Engineering Laboratory

CHARLES F. SEAVERNS

Appointed 1941

Harvard University, 1915-17; Instructor, Mathematics and Drawing, Huntington School for Boys, 1914-19; Instructor, Lincoln Preparatory School, 1914-40; Instructor, Everett High School, 1925—.

Engineering Drawing

JOHN DAVID SHORE

Appointed 1926

S.B. Massachusetts Institute of Technology, 1912; Ed.M. Boston Teacher's College, 1940; Architectural Draftsman, 1916-21; Instructor, Franklin Union, Boston, 1921-24; Head of Department of Mechanical Drawing, United States Vocational School, Portland, Maine, 1924-25; Instructor in Mathematics and Mechanical Drawing, English High School, 1925—.

Sub-Freshman Mathematics

ERNEST L. SPENCER

Appointed 1941

B.S. Northeastern University, 1936; Graduate Study, Harvard University Graduate School of Engineering, 1939—; Engineer, Everett M. Brooks, Jackson and Moreland, Massachusetts State Department of Public Works, 1936-39; Instructor in the Department of Civil Engineering, Northeastern University, 1939—.

Engineering Mathematics

FREDERICK ARLINGTON STEARNS

Appointed 1921

B.S. 1917, M.S. 1934, Massachusetts Institute of Technology; Member of American Society of Mechanical Engineers; Member of Society for Promotion of Engineering Education; Member of the Engineering Societies of New England; United States Army, 1917-19; Instructor, Massachusetts Institute of Technology, 1920; Professor in the Department of Mechanical Engineering, Northeastern University, 1920—.

Heat Engineering

THOMAS H. WALLACE

Appointed 1941

B.S. Boston University, 1933; Graduate Study, Harvard University, 1934; Graduate Study, Boston University, 1935; M.A. Harvard University, 1936; Ph.D. Boston University, 1939; Assistant in Physics, Williams College, 1935-38; Instructor in Mathematics and Physics, Northeastern University, 1939—.

*Physics***ALBERT E. WHITTAKER**

Appointed 1936

B.M.E. Northeastern University, 1924; Ed.M. Harvard University, 1932, B.S. Northeastern University, 1933; Graduate Study, Boston University, 1934-37; Member of American Society of Mechanical Engineers; Member of Society for Promotion of Engineering Education; Member of the Engineering Societies of New England; Assistant Professor of Mechanical Engineering, Northeastern University, 1924—.

*Applied Mechanics***WALTER GILBERT YEDLIN**

Appointed 1941

B.S. College of the City of New York, 1934; Ch.E. College of the City of New York, 1936; Instructor, Materials Testing Laboratory, College of the City of New York, 1934-35; Instructor, Evening Division of Franklin University, Columbus, Ohio, 1938-40; Registered Professional Mechanical Engineer, Ohio; Associate Member, American Society of Refrigeration Engineers; Engineer, Columbus Heating and Ventilating Company, Ohio, 1937-40; Engineer, Bethlehem Steel Company, Shipbuilding Division, Quincy, Massachusetts, 1940—.

Engineering Drawing Machine Drawing

EDNA M. EDISON, Executive Secretary**MILDRED L. PRATT, Stenographer****MILDRED L. SPRAKER, Stenographer**

The Lincoln Technical Institute

THE Lincoln Technical Institute is affiliated with Northeastern University. It offers evening engineering courses of college grade leading to the Degree of Associate in Engineering. These courses are acceptable towards the degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

All classes in the Lincoln Technical Institute are held in the evening and are especially designed to meet the needs of those who are employed during the day.

The Lincoln Technical Institute had its origin in the Northeastern Evening Polytechnic School. The latter received its title in 1901, when the work of various technical departments, such as the Department of Steam Engineering, the Department of Art, the Automotive School and the Department of Naval Architecture, were grouped together into curricula. By 1904 we find the school offering definite curricula, generally of three years' duration, in Architecture, Chemistry, Marine Engineering, Structural Engineering, Steam Engineering, along with courses in Art, Navigation, Surveying, Seamanship, and other related fields. In 1925 the title Lincoln Technical Institute was given to the Northeastern Evening Polytechnic School. At this time the Lincoln Technical Institute remodelled, lengthened, and consequently improved the former courses, offering a number of four-year curricula, which are described on pages 37 to 39.

In addition, provision was made so that students need not pursue a complete curriculum but could elect individual courses related to their present occupations, the only prerequisite of entry being ability to pursue the course with profit to themselves. At the present time there are nearly nine hundred students receiving instruction in the Lincoln Technical Institute in the various branches of engineering.

Since 1936 the curricular courses of the Institute have been credited by Northeastern University Evening School of Business towards the Degree of Bachelor of Business Administration in Engineering and Management offered by that school.

Effective 1939 the Lincoln Technical Institute was empowered to award the Title of Associate in Engineering to those who satisfactorily complete any one of the prescribed curricula. Effective with the Commencement Exercises, June, 1944, the Degree of Associate in Engineering will be awarded.

Because of war conditions and the part that women can play and are playing in the essential war industries, the courses have been made available to women students on the same basis as men.

The Officers of Administration are constantly alert to changing conditions and from time to time will modify existing courses to meet new needs and develop new courses so that real educational opportunities will be available to employed men and women at convenient evening hours. In particular they are sincerely interested in the problems of each student and are available for vocational and educational guidance. Through the Lincoln Technical Institute many men have been able to solve their problems and to secure that education which has enabled them to succeed in the work for which they are adapted by ability and interest. Without the facilities of the School many of these alumni would still be occupying minor positions with little opportunity for advancement on account of lack of training.

Engineering Training

THE LINCOLN TECHNICAL INSTITUTE is an evening engineering school in Boston, offering to the men and women of Metropolitan Boston the opportunity for evening engineering studies and meeting the rigid requirements expected of a good school of engineering.

The Lincoln Technical Institute, while *not claiming to offer a training equivalent to that offered by a day school of engineering* or professing to turn out finished engineers, nevertheless offers an engineering training which is of marked value. The programs are terminal programs in that they offer through the arrangement of sequential courses a thoroughly practical training that is complete in itself.

Each curriculum offered has the following outstanding features:

1. It aims to supply an increasing number of men and women who have been thoroughly trained in the fundamental theories of mathematics and the physical sciences, who can apply their knowledge to the independent solution of practical problems and to their everyday work, making intelligent use of their textbooks, manuals, and available literature.
2. Considerable stress is laid on the practical aspects of each course, and, where possible, practice is combined with theory. The courses are conducted by experienced instructors, all of whom have had practical contact with the engineering profession.
3. All courses meet at convenient evening hours, usually three evenings a week for a full program, so that students may pursue this training without leaving their present occupations and yet have adequate time for outside study.
4. For students who do not wish to carry complete programs facilities are available for studying individual subjects for which they have the pre-requisite preparation and from which they can derive benefit.
5. The fees charged are extremely moderate, and, being payable in installments, are within the reach of most ambitious men and women.



A DRAWING CLASS

A SECTION OF THE ELECTRICAL LABORATORY



6. The student body is a well-prepared, experienced, and mature group of men and women of widely varying ages and occupations.
7. Satisfactory completion of any of the prescribed programs leads to the award of the Degree of Associate in Engineering.
8. Degree credit is given in the Northeastern University Evening School of Business for work completed in the Lincoln Technical Institute.

Opportunities for Technically-Trained Students

Below are listed some of the more specific jobs in the various fields of Engineering. These give the various areas of work and the promotional steps that may be taken.

The Construction Field: This field embraces *Architecture, Civil Engineering and Structural Engineering*. The following are some of the positions in this field: construction supervisor, job superintendent, draftsman, estimator, designer, surveyor, general superintendent, contractor, field engineer, etc.

The Electrical Field: The following are some of the positions in this field: operator, maintenance man, installator and service man, tester, inspector, draftsman and designer, research worker, plant engineer, lighting engineer, estimator, production man.

The Chemical Field: Listed below are some of the positions available in the Chemical field: laboratory assistant, technician, assistant chemist, chemist, production assistant, department supervisor, laboratory supervisor, research worker.

The Mechanical Field: This field embraces also the areas of *Air Conditioning Engineering, Diesel Engineering and Aeronautical Engineering*. Some of the positions in this field are: draftsman, tool designer, checker, inspector, chief of maintenance, production engineer, machine designer, power plant test engineer, supervisor, experimental department worker.

The Field of Management: These technical areas have, of course, many related positions which are necessary to permit the smooth functioning of any business enterprise, large or small,

and frequently many of the higher salaries in the engineering field are paid to men who are in what is generally referred to as the business side of engineering. The following are some of the positions available here: office manager, specifications writer, purchasing agent, salesman, public relations agent, employment manager, plant manager, etc.

Engineering Training for War

The outbreak of World War II in Europe showed the lamentable dearth of semi-skilled and trained men. With our entry into the war, all efforts were to be directed to rapid, mass production of the machines of war — for the war was unquestionably to be a war of machines. This meant men to design these machines, men to build them, men to operate them, men to repair them. Again, the supply of engineers and technically-trained men was, and still is, far short of the demand.

Young men, who have the ability to undertake engineering training, should not hesitate to do so, even though in most cases they may be inducted into the armed services within a year or two. In spite of the war, they should take a long-range view of their own future. They can begin their professional training now and continue it after the war. In the event that they enter the armed services they can assume positions of greater national value and add greatly to our total war effort. If they do not enter the services, they are of increasing value in the national emergency through their work in vital war industries. Finally they will be able to readjust themselves more readily in the post-war period.

Older men, too, who are not likely to enter the armed forces, can not only increase their economic security during and after the war, but will by their training be making a greater contribution to national defense and the total war effort.

Women already have replaced men in war industry, and, at an early date, will be replacing men in large numbers. The number of women trained in engineering is small. It is for this reason that the army, the navy, federal agencies, and representatives of industry are urging women to undertake technical training immediately.

Engineering offers many attractive branches to which women may find themselves readily adaptable. They may engage in the fields of drafting and design, testing and inspection, research, preparation of plans and maps, and in computing and calculating operations. There are, in addition, vacancies in the various branches of Chemistry. Here, under good working conditions, they may accomplish work that offers not only prestige but also opportunities for advancement.

The courses offered at the Lincoln Technical Institute enable women to undertake essential training and to make a marked contribution towards winning the war.

Faculty

In an evening school it is particularly essential that the faculty be very carefully chosen. This is the case in the Lincoln Technical Institute, where the members of the faculty contribute to the success of the students because of the following characteristics:

- (a) they are graduates of the leading colleges and universities;
- (b) they are men of culture and high ideals;
- (c) they are in sympathy with evening school students and understand their aims;
- (d) they have had excellent training and wide experience in the subjects they teach;
- (e) most of them have served with the school for many years and take a personal interest in its aims and its success;
- (f) all are at present employed as instructors in schools, colleges, and universities in the vicinity of Boston; or are prominent in executive positions in the industrial or commercial world; or are engaged in the professional practice of engineering.

Student Body

The students of the Lincoln Technical Institute are men and women of earnest purpose and firm endeavor who bring to bear on their work a thoroughness which promises future success. Their ages last year ranged from sixteen to forty-nine, the aver-

age age being twenty-two years. Almost all the students are engaged in work during the day and many different occupations have their representatives in the student body, a fact which demonstrates that the school can be of service to men in many walks of life. Some students are preparing to enter engineering work; others are already engaged in engineering work and are studying to prepare themselves for increased responsibility and rewards.

Geographical Distribution of Students

During the school year 1942-43 the following cities and towns were represented in the student body of the Lincoln Technical Institute:

Abington	Holbrook	Readville
Allston	Holliston	Revere
Andover	Hopedale	Roslindale
Arlington	Hyde Park	Roxbury
Attleboro	Ipswich	Salem
Auburndale	Jamaica Plain	Saugus
Belmont	Lawrence	Scituate
Boston	Lexington	Sharon
Braintree	Lowell	Somerville
Brighton	Lynn	South Boston
Brockton	Malden	Stoneham
Brookline	Mattapan	Stoughton
Burlington	Marlboro	Taunton
Cambridge	Medford	Wakefield
Canton	Melrose	Walpole
Charlestown	Methuen	Waltham
Chartley	Milton	Watertown
Chelsea	Nashua, New Hampshire	Waverley
Chestnut Hill	Natick	Wellesley
Dedham	Needham	Wenham
Dorchester	New Bedford	West Roxbury
Dover, New Hampshire	Newburyport	Weymouth
East Boston	Newton	Wilmington
Everett	Norwood	Winthrop
Foxboro	Peabody	Woburn
Framingham	Quincy	Wollaston
Haverhill	Reading	

High Schools Represented

During the year 1942-43 the following high schools and preparatory schools were represented in the student body:

Abington	Hillside, N. J.	Quincy
All Hallows Institute	Hollis	Ralston Trade, Pa.
Arlington	Holliston	Reading
Attleboro	Hollywood, California	Revere
Avon	Holyoke Vocational	Rindge Technical
Bay City, Michigan	Howe, Billerica	Rochester, New York
Belmont	Hyde Park	Roslindale
Berkeley Preparatory	Ipswich	Roxbury Memorial
Boston College	Italy	Sacred Heart
Boston English	Jamaica Plain	Salem
Boston Public Latin	Kingston, New York	Salem Vocational
Boston Trade	LaSalle Academy, R. I.	Saugus
Braintree	Lawrence	Scituate
Brighton	Lexington	Shead Memorial, Maine
Brockton	Lincoln Preparatory	Somerville
Brookline	Lowell	South Boston
Brunswick, Maine	Lynn Classical	St. James, Haverhill
Burlington	Lynn English	St. John's
Cambridge High and Latin	Malden	St. Mary's
Cathedral, Springfield	Malden Catholic	Stoughton
Central Evening	Manchester, N. H.	Stroudsburg, Pa.
Central, Pennsylvania	Marblehead	Stuyvesant, New York
Charlestown	Marlboro	Swampscott
Chauncy Hall	Mechanic Arts	Taunton
Chelsea	Medfield	Thomaston, Conn.
Cincinnati, Ohio	Melrose	Tilton Academy, N. H.
Dearborn, Michigan	Methuen	Tsotylon, Greece
Dedham	Milford, Conn.	Umatilla, Florida
Delhi	Milton	Vienna, Austria
DeWitt Clinton, New York	Nashua, N. H.	Waltham
Dorchester	Natick	Washington
Durfee	Needham	Watertown
East Boston	New Bedford	Westford Academy
England	Newburyport	Weston
Everett	Newton	Weymouth
Fitchburg	North Quincy	White Plains, N. Y.
Foxboro	Norton	Williston Academy
Framingham	Norwalk, Connecticut	Wilmington
Gardner	Northampton	Winthrop
Greenfield	Norwood	Woburn
Haaren, New York	Peabody	Woonsocket, R. I.
Hanover	Portland, Oregon	Worcester Trade
Haverhill	Punchard, Andover	Yarmouth Maine

Location of School

The work of the school is conducted in the following four buildings of Northeastern University situated on an eight-acre campus on Huntington Avenue just beyond Massachusetts

Avenue opposite the Boston Opera House at the entrance to the Huntington Avenue Subway.

Richards Hall at 360 Huntington Avenue contains the headquarters of the school. This building has more than one hundred thousand square feet of space and is adequately equipped with classroom, drawing-room, and laboratory facilities. In the basement are the check-room, the bookstore, and the Husky Hut.

New Building. This building, completed and occupied in November, 1941, contains forty-two thousand square feet of floor space. In this building are located the Chemical Engineering and Biological laboratories, a large Commons room open to day and evening students, and eighteen classrooms and lecture halls.

The East Building consists of an area of forty thousand four hundred and twenty square feet of space in which are situated the library, several classrooms, and the Chemical laboratories.

The South Building is situated in rear of the East Building and consists of twenty-six thousand five hundred and sixty square feet of space containing several classrooms and the Electrical laboratories.

Transportation

The school is easily reached from the North and South Stations, and from the various points of the Boston Elevated System, since it is situated at the entrance to the Huntington Avenue Subway, opposite the Boston Opera House.

The railroad systems entering Boston issue students' tickets to students under twenty-one years of age. Applications for these may be obtained at a railroad office and presented at the school office for signature.

Parking

Ample parking facilities are available in the rear of the East Building and in the area adjacent to Richards Hall.

Library

In the East Building a large and well-equipped library is available for the use of students. The reading rooms are open from

9 a.m. to 10 p.m. on week days, and from 9 a.m. to 1 p.m. on Saturdays. Students have also the privilege of securing books from the Boston Public Library and its branches. To obtain this privilege application should be made at the school office where the necessary blanks will be furnished.

Text Books and Supplies

The Lincoln Technical Institute enjoys the facilities of the University Bookstore, which is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the Institute may be purchased at the Bookstore, which is situated in Richards Hall. In addition, the Bookstore also carries a large number of general supplies. It should be pointed out that students attending Freshman Drawing should be prepared to expend a sum of approximately \$5.00 for drawing supplies, exclusive of the cost of a satisfactory set of drawing instruments.

Visitors

Visitors are always welcome at one class session in any department. Those who wish to visit any of the classes should call at the school office and obtain a visitor's card signed by the Dean.

Notify the Office Immediately

- (a) Of any change of address;
- (b) Of withdrawal from any course — otherwise the fee for that course will be charged;
- (c) Of withdrawal from the school — giving the date of the last lecture attended.

Interviews and Educational Guidance

Prospective students or those desiring advice or guidance with regard to any part of the school work or curricula, or who wish assistance in the solution of their educational problems, should note the fact that interviews are available without obligation, and that the officers of the school will do their utmost to see

that a program is designed which is the most satisfactory for the individual students. In certain cases, other institutions may be recommended which suit the student's needs better. Furthermore it is important that those with educational problems to solve should realize the necessity for care in approaching educational work so that the program selected will be on the best educational basis.

Awards for Scholastic Achievements

For the school year, 1943-44, the Executive Council has offered the following scholarships. To the highest ranking Sub-Freshman, Freshman, Sophomore and Junior who returns for the following school year a scholarship of \$60. To the second highest ranking Sub-Freshman, Freshman, Sophomore and Junior who returns for the following school year a scholarship of \$30. These scholarships will be awarded only to students pursuing a full program for the Degree of Associate in Engineering.

The winners of these scholarships for the past school year were:

<i>Sub-Freshman</i>	First, Robert L. Nicholas, Alphonse Paulavich Second, Raffaele J. Mallio
<i>Freshman</i>	First, T. Spencer Greenwood, Jr. Second, Clarence C. Hansen
<i>Sophomore</i>	First, Joseph F. Distefano Second, Ernest J. Stukas
<i>Junior</i>	First, Gilmore C. Dickey, Jr. Second, Laurence A. Sullivan

The awards were made at the Annual Commencement Exercises held in Bates Hall on June 15, 1942.

Requirements for Admission

Regular Students

Applicants for admission who present evidence of completion of an approved secondary school course, or the equivalent of fifteen units (including one unit in Algebra and one in Plane Geometry) may be admitted as regular students, candidates for the Degree of Associate in Engineering and also eligible to proceed later, if they so desire, to the Degree of Bachelor of Business Administration in Engineering and Management offered by Northeastern University Evening School of Business.

Conditioned Students

Because of the war emergency and the great need for technically-trained men, the Institute will admit as conditioned students certain applicants who, although they are not high school graduates, have completed such secondary school work as embraces one unit of Algebra and one of Plane Geometry, and who in the opinion of the Committee on Admissions can profit by the work offered.

These students, after completing satisfactory work, may be reclassified as regular students and become eligible to receive the Degree of Associate in Engineering.

Special Students

Students who wish to register for a special program or for single courses will be admitted as special students, not candidates for the diploma or Degree, provided their previous education and training permit them to pursue the courses with profit.

Programs are planned to meet individual needs and should prove of benefit to those who wish rapid and immediate knowledge of certain fields, whether to supplement former training or to obtain preparation which will permit them to enter a new line of endeavor.

Late Registration

Students should avoid late registration. Those who find it necessary to register late may be permitted to enter the school provided that they have not lost so much work as to render it unlikely that they will succeed in their courses. No deduction from tuition fees is made because of late enrollment.

Classification of Students

Division A

Students who enter school at the beginning of the normal school year in September are termed Division A students. Programs for these students can be arranged so that the work of the school year is completed by May or in early June by attendance three evenings a week. Students, however, may elect to carry a lighter scholastic load than the regular program. Summer courses are not necessary for Division A students.

Division B

Students entering school in January are termed Division B students. These students terminate the first part of their studies by the end of May, attending three evenings a week. However, to complete the work of the Freshman year, it is necessary that they attend a summer course which meets for two evenings a week. Students pursuing this program may continue with the Sophomore program in the September of the year in which they enter school, and thereafter attend during the normal school year.

Summer attendance is not compulsory, but in the event that a student does not pursue a summer course, attendance is necessary over a period of five school years to complete graduation requirements.

Sub-Freshmen

Students who have not completed Algebra and Geometry, or those who wish to review these subjects because of the remoteness of their former period of study are termed Sub-Freshmen. Their course will consist of Algebra and Geometry and the Freshman courses in Engineering Mathematics and Engineering Drawing. These courses begin in September and extend for thirty-two weeks. During the Summer Term the program consists of the Freshman course in Physics.

Students who complete these courses will be admitted to the work of the Sophomore year. This program permits them to save a year which would otherwise be lost, since it enables them to graduate in the customary period of four years.

Students are admitted to this course only after a personal interview with the Dean.

Tuition and Other Fees

Matriculation Fee

A Matriculation Fee of \$5.00 is payable by each student on his initial entrance to the school. *This fee is not returnable, except where the student is refused admission to the school.*

Tuition Fees

Division A

The tuition charges and laboratory fees may be determined by consulting the alphabetical list of courses on page 49. These charges are usually \$120 for a full program and may be paid in six equal installments as follows:

First payment	On registration
Second payment	Week of October 25-30
Third payment	Week of December 6-11
Fourth payment	Week of January 24-29
Fifth payment	Week of March 6-11
Sixth payment	Week of April 10-15

Division B

Students entering Division B may carry only two courses between January and June, the fees for which are \$80, payable in four equal installments as follows:

First payment	On registration
Second payment	Week of February 21-26
Third payment	Week of March 20-25
Fourth payment	Week of April 17-22

In addition there is a summer course for Division B students the fees for which are \$40, payable in two equal installments as follows:

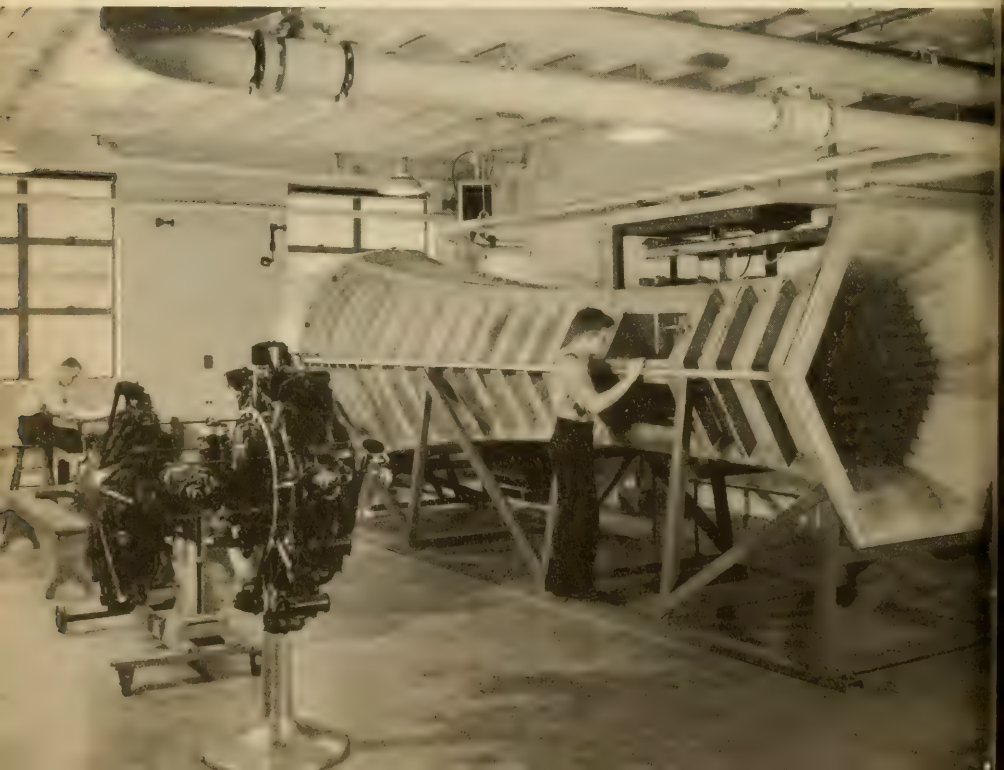
First payment	On registration
Second payment	Week of July 17-22

In certain cases even the installment plan indicated above for Division A or Division B will not meet the needs of many deserving students. Such students are requested to confer with an officer of the school regarding a satisfactory plan for the payment of fees.



A SECTION OF THE CHEMISTRY LABORATORY

WIND TUNNEL



The Officers of Administration require that students abide by the terms of their agreement and that all students make payments on the dates specified.

University Fee

All students will pay, in addition to tuition and laboratory fees, a University fee based on the program he is carrying.

For students enrolled in three full courses . . .	\$10.00
For students enrolled in two full courses . . .	7.00
For students enrolled in one full course . . .	3.00

Charges for Partial Program

In cases where students are not carrying a full program the tuition fees are payable as follows:

- (a) If the total charges are \$80.00 or more, fees may be paid in six installments.
- (b) If the charges are more than \$40.00 but less than \$80.00 fees are paid in four equal installments.
- (c) If the charges are \$40.00, fees are payable in two successive installments.

No deduction from tuition fees is made because of late enrollment.

Laboratory Fees

All students taking courses which require laboratory work are charged laboratory fees in accordance with the following rates:

Aeronautical Laboratory	\$5.00
Analytical Chemistry Laboratory	15.00
Electrical Laboratory	5.00
Electrical Laboratory, Advanced	5.00
Engineering Laboratory	5.00
Inorganic Chemistry Laboratory	15.00

Laboratory fees are not returnable.

For students taking Chemistry there is in addition a Chemistry laboratory deposit of \$5.00, the unused portion of which will be re-funded after deductions for breakages and non-returnables.

Special Examination Fees

The fee for each special examination for advanced standing, for conditioned students, or for students who have for justifiable cause omitted to take the regular scheduled examinations is \$3. The fee must be paid before the examination is taken.

Diploma Fee

On completing the curricular requirements for the Degree of Associate in Engineering the student will pay a diploma fee of \$10. This fee must be paid by May 15 in the year of the student's graduation.

Tuition Regulations

Scholarships

The Executive Council has made available a few scholarships to assist needy students of good mental capacity who because of financial limitations might be deprived of educational opportunities. The award when a scholarship is granted is never in excess of one-half of the student's tuition fees for the year.

Bills

The school endeavors to mail bills to students ten days in advance of the payment date and also issues announcements in class to the effect that a payment date is falling due. In those cases where students have not received bills, they should report the fact to the school office. Students are reminded that the non-receipt of a bill does not exempt them from the responsibility of meeting their payments on the dates assigned (See Page 25) and that failure to do so will cause the student's exclusion from class until he has conferred with an officer of the school.

In the event that absence from school is unavoidable at payment periods, students are advised to mail check or money order.

Students may obtain a statement of their accounts at any time.

Cost of Drawing Materials

Students taking Freshman Drawing should be prepared to expend a sum of approximately \$5.00 for drawing supplies, *exclusive of cost of a satisfactory set of drawing instruments.*

Charges for Damages

Students who damage apparatus in the laboratories or who willfully destroy school property will be responsible for the replacement of such damaged articles or for the cost of replacement where this is undertaken by the school.

Charges for Partial Attendance

In the event of a student's withdrawal from school, he is charged on a pro rata basis for the weeks he has attended. These charges are as follows:

34 week courses — 4% of the total charges for each week of attendance in each semester.

20 week courses — 6% of the total charges for each week of attendance each half term.

17 week courses — 8% of the total charges for each week of attendance.

The same charges are applicable in the event that a student abandons a part of his program. In addition the full Laboratory Fee is charged in those cases where a student is pursuing a laboratory course.

Refund Policy

Students who are forced to withdraw from a course or from the school are expected to notify the school office by completing the withdrawal blank which will be furnished.

Since the school assumes the obligation of carrying the student throughout the year for which he registers, and since the instruction and accommodation are provided on a yearly basis, the Executive Council of the Lincoln Technical Institute has ruled as follows:

- A. The matriculation fee is not refundable.
- B. Application for refunds must be presented within forty-five days after withdrawal from school.
- C. Refund in the case of complete withdrawal from school will be granted by the Committee on Withdrawals for reasons which they deem adequate. Among the reasons deemed adequate are the following:
 - (a) Personal illness.
 - (b) Change of employment by direction of employer whether in the schedule of time or in place of employment.

- (c) The situation where the student becomes the sole or partial support of the family so as to make it impossible for him to continue his studies.
- (d) Loss of position.
- (e) Change of residence.
- (f) A voluntary change of employment, the hours or the residence being such that he is unable to continue attendance.

In all the above cases it is expected that a medical certificate, letter from employer, or other appropriate substantiating documentary evidence will be produced by the student.

Administrative Regulations

Applications for Admission

APPPLICATIONS for admission should be filed as early as possible in order that the necessary investigations may be made and the status of each student definitely determined before the opening day.

Registration

Each student is required to present himself at the School Office, and to have his course approved by the Dean or his assistants and to complete his registration. A student is expected to pay the first tuition installment and other fees required before beginning attendance.

Late registration will be permitted only at the discretion of the Dean.

The School Year

The school year is divided into two semesters of seventeen weeks each. The first semester extends from September 13 to January 21, and the second semester from January 24 to May 19, except that make-up sessions for public holidays may extend either term. Attention is drawn to the fact that Division B students begin their studies on January 10.

Graduation Requirements

Students may register for single subjects or for complete courses provided such registration meets with the approval of the Dean; but to receive the Degree of Associate in Engineering the student must fulfill the following conditions:

- a. He must complete all the courses of his particular curriculum, either by attendance at this Institute, or by receiving advanced standing credit for those courses, or the equivalent of those courses, as determined by the Dean.
- b. He must pass such final examinations as are required in the courses he has pursued. The various curricula have been arranged so that the courses can be completed in four years. However, an extension of time will be granted to those who wish to take longer to meet the requirements for graduation.
- c. Regardless of the advanced standing credit he receives, he must have been in attendance for at least a year preceding

the date on which he expects to graduate; that is, he must complete at least one full year's work in the Lincoln Technical Institute.

Sessions

Classes meet on week-day evenings. There are no classes on Saturdays. A full schedule will include three evenings a week. As a rule classes are scheduled from 7 p.m. till 9 p.m., although occasionally classes continue until 9.30 p.m. Laboratory periods in Chemistry are of four hours' duration.

Attendance Requirements

A careful record of attendance upon class exercises is kept for each student. Absence from regularly scheduled classes on any subject will seriously affect the standing of the student. It may cause the removal of certain subjects from his schedule and the listing of these as "conditioned subjects." However, if reasonable excuse for absence be presented, the student may be allowed to make up the time lost, and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course shall designate.

Students who are unavoidably absent from class may receive the home work assignments by telephoning the school office.

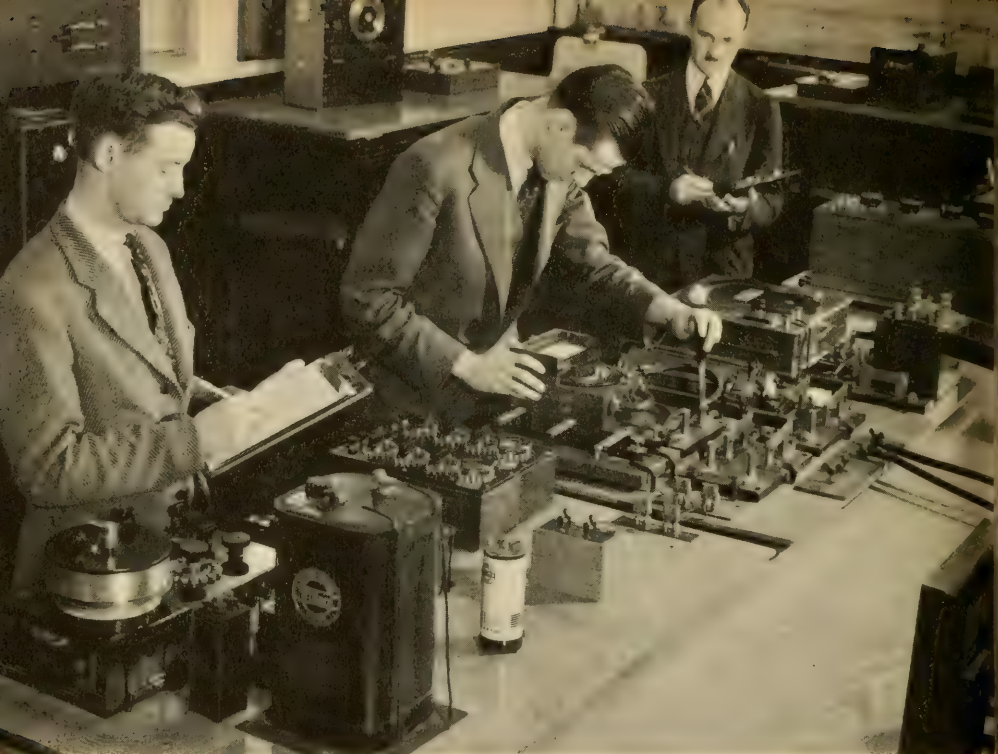
A minimum attendance record of 75% must be maintained in all classes before a student will be admitted to examination.

Examinations and Quizzes

Examinations and quizzes are held throughout the term at the discretion of the instructors. Quizzes are to be made up at the discretion of the instructor. The fee for each make-up quiz is \$1.50. Final examinations are required upon the completion of all courses. The following system of grading is used:

- A — 90 to 100 — Excellent
- B — 80 " 89 — Good
- C — 70 " 79 — Fair
- D — 60 " 69 — Lowest Passing Grade
- F — 50 " 59 — Conditioned Failure
- FF — Below 50 — Complete Failure

A student marked "F" in a final examination may receive one special examination. If he fails in that, he must repeat the



ELECTRICAL ENGINEERING EXPERIMENT

ONE OF THE CLASSROOMS



course. It is to be noted that a student whose grade is "F" *must petition for re-examination*. Permission to take a make-up examination is a privilege, not a right, and is dependent upon the quality of work the student has done throughout the course. Conditioned or make-up examinations are given in September before the opening of the next school year.

A student marked "FF" must repeat the course. The fee for each special examination is \$3. Grades and reports are mailed to the students and will not be given out at the School Office. Under no circumstances will grades be given over the telephone.

It is to be noted that no student will be permitted to graduate who does not maintain a "C" average and that students who have not maintained such an average by the end of the Sophomore year will not be permitted to continue in school.

Transfers

Students are not permitted to change from one course to another without first consulting the Dean and receiving a Transfer Order signed by him.

Reports of Standing

An informal report of the student's standing is issued at the end of the eleventh and the twenty-second week; and the formal report, covering the year's record, is issued at the close of each year.

In the case of students who are under twenty-one years of age, reports may be sent to parents in the event of unsatisfactory work on the part of the student, non-compliance with administrative regulations, continued absence, and withdrawal. Parents of minors may obtain reports at any time on request.

Students Admitted with Advanced Standing

Students who, upon admission, were granted provisional advanced standing credit, but did not present evidence of their eligibility to such credit, may not continue in school unless their credentials are presented to the Dean before the close of the first semester. The school is glad to aid students in obtaining transcripts of record.

Methods of Instruction

Instruction is given by means of lectures, recitations, laboratory work, and practical work in the drawing rooms. Great value is set upon the educational effect of these exercises, which constitute the foundation of each of the courses. Oral and written examinations are held at the discretion of the instructors.

The attention of every student is drawn to the fact that home assignments must be dutifully done and written work submitted as assigned if the student's grade is not to be seriously affected. Wilful disregard of this matter will result in disciplinary action by the Administrative Officers.

Subjects of Instruction

On pages 51 to 57 will be found a detailed statement of the scope of the subjects offered in the various courses. The subjects are numbered for convenience of reference in consulting the various curriculum schedules.

Required courses, and those prerequisite thereto, must have been successfully pursued before any advanced course may be taken.

Information Regarding Courses

Curricular Programs Leading to the Degree of Associate in Engineering

The Lincoln Technical Institute offers four-year courses in Chemistry, Civil and Structural Engineering, Electrical Engineering, and Mechanical Engineering, the last of which is also available with an Aeronautical option.

On the satisfactory completion of a prescribed four-year course the Degree of Associate in Engineering is awarded to all regular students.

All these courses are of strictly college grade. In those cases where students are unable, because of circumstances, to carry all of the work prescribed in any year, an extension of time will be granted by the Dean, who will determine which subjects shall be excluded, and also the order in which the omitted subjects shall later be studied.

Schedules of the various curricula are given on the following pages. The work of the first year is the same for all curricula except the special course in Chemistry described on page .

When a student elects a curriculum he is expected to complete all the subjects in that curriculum in order to receive the Degree unless he has the permission of the Dean to drop or omit certain subjects and substitute others for those omitted.

Chemistry Course

Leading to the Degree of Associate in Engineering

The Sciences of Chemistry and Chemical Engineering have undergone a marked development during the past thirty years. The Chemist is in demand in every industry. His aid is sought in the operation of plants for the production of such products as gas, coke, oil, paint, fertilizers, drugs, etc. His help is requested in the development of more economical processes, in the potential use of by-products, and in the actual discovery of new products in private laboratories or in the research laboratories of industry.

As a result of the training offered by this curriculum a student has the opportunity of entering the field of Chemistry at a point appropriate to his period of study. The training is sufficiently general so that a variety of industries is open to him, yet deals quite specifically with particular industries in which a person may be definitely interested.

First Year

Engineering Mathematics

Physics

Engineering Drawing

Second Year

Advanced Mathematics

Inorganic Chemistry Lectures

Inorganic Chemistry Laboratory

Third Year

Applied Mechanics

Analytical Chemistry Lectures

Analytical Chemistry Laboratory

Fourth Year

*Engineering Elective

Organic Chemistry Lectures

Organic Chemistry Laboratory

*Among the elective subjects deemed desirable are Heat Engineering, Electricity and Machine Drawing.

Graduation from this program carries four years' credit towards a six-year program leading to the Degree of B.A.A. in Engineering and Management offered by Northeastern University Evening School of Business.

Students pursuing this program need not pay the cost of the individual courses, but are charged only \$120 for each year. There are, of course, laboratory fees in addition. (See page 27.)

Special Course in Chemistry

Leading to a Diploma

First Year

Inorganic Chemistry Lectures
Inorganic Chemistry Laboratory

Second Year

Analytical Chemistry Lectures
Analytical Chemistry Laboratory

Third Year

Organic Chemistry Lectures
Organic Chemistry Laboratory

An additional course, Industrial Chemistry, Lectures and Laboratory, will be offered in any year if sufficient students desire it.

These courses carry credit towards the Degree of Associate in Engineering and the Degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

Students wishing to pursue programs for the Degree should consult the Dean regarding particulars.

Civil and Structural Engineering Course

Leading to the Degree of Associate in Engineering

The course in Civil and Structural Engineering is designed to give the student sound training in the sciences upon which professional practice is based.

These branches of Engineering cover such a broad field that no one can become expert in its whole extent.

The students are trained in the relatively compact body of principles upon which all the various branches depend. As a result of his training the student may engage in land surveying, construction of sewers, water works, roads, buildings, and streets.

Instruction is given by lecture and recitation and by drafting room practice. In addition the student is made familiar with the instruments used in Civil Engineering, and, when weather conditions permit, in their actual use in the field.

First Year

Engineering Mathematics
Engineering Drawing
Physics

Second Year

Advanced Mathematics
Surveying
Applied Mechanics

Third Year

Strength of Materials
Highway Engineering (1)
Structural Drawing
Hydraulics (2)

Fourth Year

Engineering Structures
Concrete (1)
Concrete Design (2)
Structural Design

(1) signifies First Semester Course

(2) signifies Second Semester Course

Graduation from this program carries four years' credit towards a six-year program leading to the Degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

Electrical Engineering Course

Leading to the Degree of Associate in Engineering

The course in Electrical Engineering is designed to lay a thorough foundation for future progress along the lines of work which may particularly appeal to the individual, and to give him an adequate knowledge of the essential principles which underlie each of the more specialized branches of professional activity. Parallel with the theoretical work runs a carefully planned course of laboratory work which is intended to develop the student's powers of planning work for himself.

The instruction has been carefully planned and the time carefully divided among recitations, lectures, home work, reports, and laboratory tests in order to develop in the student the power to investigate carefully and to apply theoretical principles to practical problems.

First Year

Engineering Mathematics
Engineering Drawing
Physics

Second Year

Advanced Mathematics
Electricity I
Applied Mechanics

Third Year

Strength of Materials
Electricity II
Electrical Laboratory

Fourth Year

Heat Engineering
Electricity III
Advanced Electrical Laboratory

Graduation from this program carries four years' credit towards a six-year program leading to the Degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

Mechanical Engineering Course

Leading to the Degree of Associate in Engineering

The course proceeds from the fundamental courses in Mathematics, Drawing, and Physics to the more advanced courses in Heat Engineering, Mechanism, and Machine Design, etc., that form the background of all future study in the Mechanical field. The curriculum embraces instruction by textbook, lecture, drawing-room, and laboratory.

It gives the student a good theoretical training and in addition devotes sufficient time to practical applications of theory so that he obtains a training which equips him for advancement in the many subdivisions of the field of Mechanical Engineering. Students interested in Aeronautical work may select appropriate courses in Aerodynamics, Airplane Engines, and Airplane Design in the senior year.

First Year

Engineering Mathematics
Engineering Drawing
Physics

Second Year

Advanced Mathematics
Machine Drawing
Applied Mechanics

Third Year

Strength of Materials
Mechanism (1)
Hydraulics (2)
Heat Engineering

Fourth Year

Machine Design
Engineering Laboratory
*Engineering Elective

Fourth Year (Aeronautical Option)

Aeronautical Laboratory (2)
Aerodynamics (1)
Airplane Design
Airplane Engines

(1) signifies First Semester Course

(2) signifies Second Semester Course

*Among the elective subjects deemed desirable are Concrete (1), Electricity, and Airplane Design.

Graduation from this program carries four years' credit towards a six-year program leading to the Degree of B.B.A. in Engineering and Management offered by Northeastern University Evening School of Business.

Degree of Bachelor of Business Administration Program

THE Lincoln Technical Institute works in conjunction with the Evening School of Business, Northeastern University, in offering to students who hold the Degree of Associate in Engineering a six-year program leading to a degree of Bachelor of Business Administration in Engineering and Industrial Management offered by the School of Business. The Engineering work in this program may be completed in one of the following fields: Mechanical and Aeronautical, Civil and Structural, Electrical, and Chemistry.

Degree Program

	Semester Hours
<i>Lincoln Technical Institute:</i>	
Twelve approved full courses in chosen engineering program (any of the curricula listed on page 49).	60
<i>School of Business:</i>	
Accounting Aids to Management	5
Business Economics	5
Industrial Management Problems and Policies	5
Business and Industrial Management	5
Principles of Production and Scientific Management	5
Principles of Purchasing	2½
Business Reports and Conferences	2½ 30
*Business Readings	5
**Occupational Experience	30
	<hr/>
Total Semester Hours Required for Degree	125

*There are no lectures in the Business Readings Course, which is designed to broaden the student's acquaintance with selected readings in the field of business.

**Occupational Experience is awarded to a maximum of ten semester hours for each of the last three years of the course. The award is based on the nature and quality of the student's occupation during this period.

Engineering Equipment

Field Instruments of Civil Engineering

For work in the field the Civil Engineering Department possesses various surveying instruments representing the principal makes and types in general use.

The equipment includes six surveyors' compasses, two Keuffel and Esser transits, five Buff and Buff transits, one Buff and Buff triangulation transit, three Berger transits, one Hutchinson transit, two Wissler transits, one Gurley transit, one Poole transit, three Berger levels, two Keuffel and Esser levels, two Buff and Buff levels, one Bausch and Lomb precise level, two Gurley plane tables, two Buff and Buff plane tables, two Keuffel and Esser plane tables, and one Berger plane table.

There are Locke hand levels, lining rods, leveling rods, stadia rods, tape rods, engineers' and surveyors' chains, steel and metallic tapes, one 100-foot Invar steel tape, and all necessary miscellaneous equipment for field work.

Chemical Laboratory Equipment

For experiments and investigations in Chemistry there are available two laboratories with the following equipment:

Analytical Chemistry

The laboratory for Analytical Chemistry is fully equipped for giving instruction in the usual undergraduate courses. Each student is supplied with the necessary Pyrex and Kimble laboratory glassware, Stillmanite and Coors porcelain, and the standard pieces of hardware. Special equipment of all needed types is available.

An adjoining balance room is equipped with Becker and Voland balances suitable for quantitative analytical work.

Industrial Chemistry

This laboratory is equipped with high pressure steam, vacuum, and the facilities usually found in a chemical laboratory. The various instruments and other chemical equipment necessary for

the examination, testing, and analysis of the raw materials, intermediate and final products of the various industries are at hand.

The electrical equipment includes a Kimley electro-analysis machine for the determination of copper, lead, nickel, and zinc; a Hevi-duty electric furnace for use in ignition and combustion work; and a Freas drying oven capable of adjustment for various temperatures. Power is available in a variety of D. C. and A. C. voltages.

Inorganic Chemistry

In the locker assigned to each student for his individual use are the articles needed more or less continually by him as he does his experiments in the laboratory sessions. He has a liberal supply of glass, porcelain, metal, and other articles. Additional pieces of apparatus are issued from the stockroom or otherwise made available for use in particular experiments where they are needed.

The laboratories are equipped with general facilities appropriate to this course, such as gas, electricity, cold and hot water, fume hoods.

Organic Chemistry

The needed equipment is available. There are individual lockers and apparatus, fume hoods for general use, and special equipment, as required.

Drying operations are carried out with the aid of a steam-heated drying chamber, and electrically heated drying oven. Steam lines on the benches supply the steam for steam distillations, eliminating the necessity of individual steam generators.

Electrical Engineering

The basement of the South Building is occupied by the electrical laboratories. These cover an area of approximately 7,800 square feet and include the dynamo, measurements, and high tension laboratories.

Dynamo

This laboratory is provided with both 60 cycle 3 phase 230 volt alternating current and 115-230 volt three-wire direct current. The equipment includes more than sixty motors and generators of different types together with the necessary auxiliary equipment to operate and test them. The motors and generators have been selected so as to reduce as much as possible the risk from high voltage while making available to the students a representative range of commercial apparatus.

Electrical Measurements

The equipment here is of two distinct types: first, that planned primarily for teaching principles of measurement, and secondly, that which is used in teaching advanced standardizing methods as well as for calibrating instruments in other laboratories of the University. Briefly, this laboratory is equipped for practically any work in electrical measurements except for the absolute determinations carried on in national standardizing laboratories.

Mechanical Engineering

The Mechanical Engineering Department has a suite of well equipped laboratories containing a large variety of modern machines and occupying over 10,000 square feet of floor space in the basement of Richards Hall. Special areas have been set aside and equipped for oil testing, concrete mixing, mechanics research, and similar purposes. Auxiliary equipment is, of course, available for making all the usual tests and measurements.

Steam Power

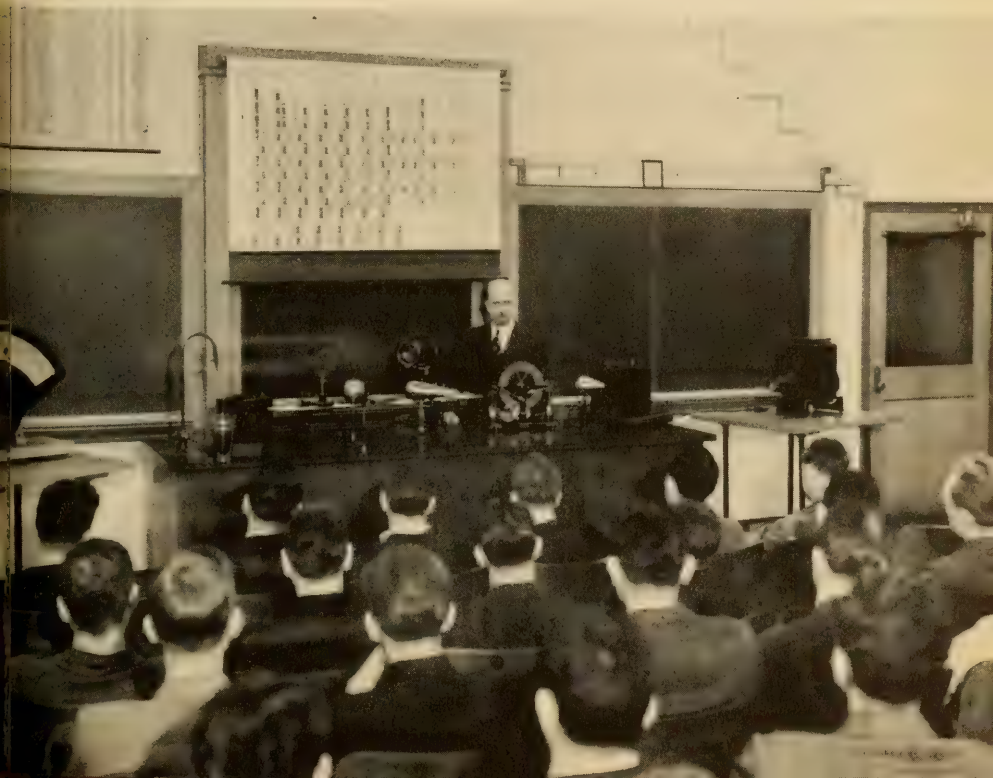
This equipment includes a wide variety of steam engines, turbines, pumps, heat exchangers, and measuring instruments.

The auxiliary steam power plant operated by the University and the Boston Y.M.C.A. is also used for testing purposes. This plant consists of four horizontal return tubular boilers, two burning coal and two burning fuel oil. These feed three reciprocating steam engines and one turbine which in turn drive four direct current generators.



A VIEW OF THE LIBRARY

A PHYSICS DEMONSTRATION



Internal Combustion and Aeronautics

The internal combustion equipment includes a number of gas and oil, automobile, airplane, and Diesel engines. Most of these are set up for running experimental tests, but several are available for dismantling and demonstration purposes.

In addition to the study of airplane engines, the laboratory is equipped with a small wind tunnel for experimental work in aerodynamics.

Refrigeration, Heating, and Air Conditioning

Included under this heading are an ammonia refrigerating machine, a constant temperature room equipped for either heating or cooling, and a large air conditioner unit.

Aeronautical Laboratory

The Aeronautical Laboratory includes a two dimensional fluid flow analyzer for observing air flow over various models.

An open circuit Venturi type wind tunnel having a three-foot throat and capable of 120 miles per hour wind velocity is available for experimental and demonstration work in the measurement of air forces on model planes and other structures. The tunnel is equipped with three component hydraulic balances having variable degrees of sensitivity.

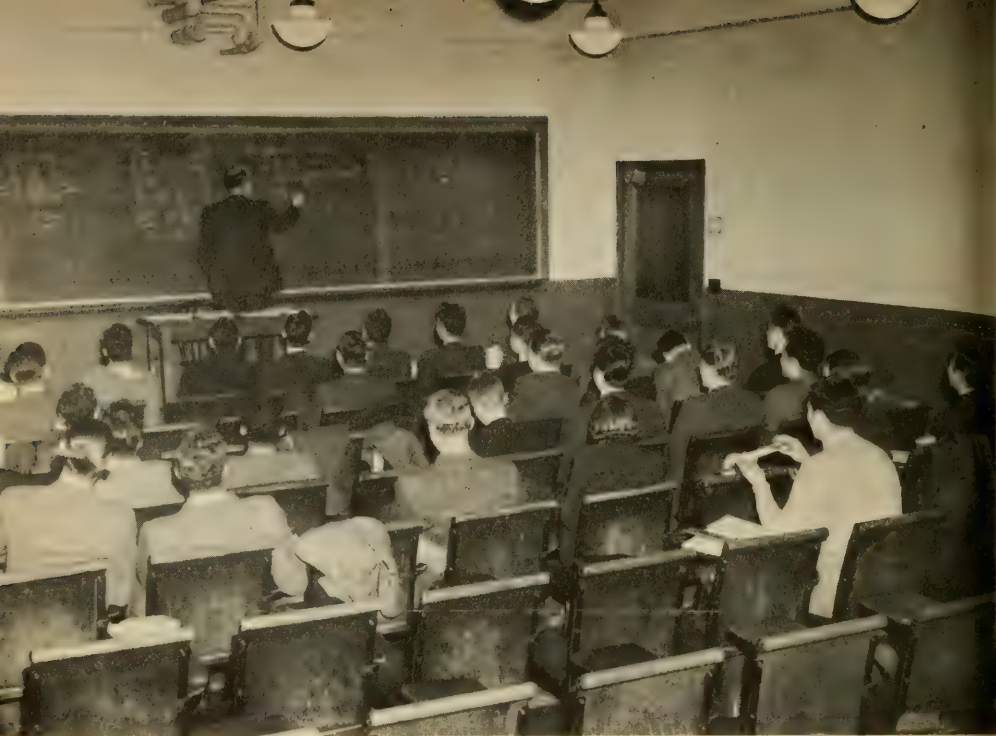
Design and Drafting Rooms

The School possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with lockers containing the drawing supplies, and files containing blue prints, and photographs of machines and structures that represent the best practice. Drafting room blackboards are equipped with traveling straightedge devices which facilitate speed and accuracy in blackboard demonstrations.

Physics Department

The Physics equipment has been carefully selected and is ample for demonstrating physical principles. The following apparatus is available for this purpose:

Motor driven Hyvac pump, mechanical oscillator, elasticity apparatus; Joly balance; barometers; pulleys; specific gravity bottles; torsion balance; eight-foot slide rule; wave apparatus; spherometers; organ pipes; tuning forks; Hartl optical disk; arc illuminator; projection lantern; refraction apparatus; metro-nome; lenses; calorimeters; hydrometers; thermometers; burners; apparatus for measuring latent heat, specific heat, expansion and mechanical equivalent of heat; optical bench and supplies; diffraction grating; spectroscopes; rheostats; galvanometers; magnets; electro-static apparatus; electroscope; Wims-hurst machine; induction coil; ammeters; voltmeters; resistance boxes; condensers; wheatstone bridges; thermocouples; demonstration table equipped with water, compressed air, exhaust hood, 110 volts D.C., 110 volts A.C., and 220 volts A.C.



ONE OF THE CLASSROOMS

A SECTION OF THE MECHANICAL LABORATORY



List of Individual Subjects in All Curricula

<i>Subject</i>	<i>Day</i>	<i>Time</i>	<i>Fee</i>
1. Advanced Mathematics	Monday	7-9	\$40.00
2. Aerodynamics (1)	Monday	7-9:30	20.00
3. Aeronautical Laboratory (2)	Monday	7-9:30	20.00*
4. Airplane Design	Thursday	7-9	40.00
5. Airplane Engines	Friday	7-9	40.00
6. Applied Mechanics	Thursday	7-9	40.00
7. Chemistry, Analytical Laboratory	Friday	7-11	60.00*
8. Chemistry, Analytical Lectures	Tuesday	7-9	40.00
9. Chemistry, Inorganic Laboratory	Thursday	7-11	60.00*
10. Chemistry, Inorganic Lectures	Tuesday	7-9	40.00
11. Chemistry, Organic Laboratory†	Friday	7-11	60.00*
12. Chemistry, Organic Lectures†	Tuesday	7-9	40.00
13. Concrete (1)	Monday	7-9	20.00
14. Concrete Design (2)	Monday	7-9	20.00
15. Electricity I	Wednesday	7-9	40.00
16. Electricity II	Monday	7-9	40.00
17. Electricity III	Monday	7-9	40.00
18. Electrical Laboratory	Friday	7-9:30	40.00*
19. Electrical Laboratory, Advanced	Friday	7-9:30	40.00*
20. Engineering Drawing	Wednesday	7-9:30	40.00
21. Engineering Laboratory	Monday	7-9:30	40.00*
22. Engineering Mathematics	Monday	7-9:30	40.00
23. Engineering Structures	Thursday	7-9	40.00
24. Heat Engineering	Wednesday	7-9	40.00
25. Highway Engineering (1)	Tuesday	7-9	20.00
26. Hydraulics (2)	Tuesday	7-9	20.00
27. Machine Design	Tuesday	7-9	40.00
28. Machine Drawing	Wednesday	7-9:30	40.00
29. Mechanism (1)	Friday	7-9	20.00
30. Physics	Thursday	7-9:30	40.00
31. Strength of Materials	Monday	7-9	40.00
32. Structural Design	Friday	7-9:30	40.00
33. Structural Drawing	Friday	7-9:30	40.00
34. Sub-Freshman Mathematics	Monday and Thursday	7-10	80.00
35. Surveying	Friday	7-9:30	40.00

*Plus laboratory fee (See page 27).

(1) Signifies First Semester Course.

(2) Signifies Second Semester Course.

All other courses are two semesters in length.

†Not offered 1943-1944.

Description of Courses

1. *Advanced Mathematics.* (Prerequisite, *Engineering Mathematics*)

In the first part of this course instruction is given by lectures and recitations in the following subjects: plotting of functions, interpolation, the straight line, the conic sections, curves represented by various equations of common occurrence in engineering, graphic solution of equations, determination of laws from the data of experiments, simplification of formulas, and alignment charts. The plotting and analysis of charts in order to determine empirical formulas is an important part of the course.

The latter part of this course is devoted to lectures and recitations in the calculus, covering the following subjects: rate of change, differentiation, maximum and minimum, integration, definite integrals, with application to the determination of area, volume, center of gravity, and moment of inertia. Problems are assigned to illustrate the use of all formulas studied in class.

2. *Aerodynamics.* (1)

Among the topics covered in this course are: the flow of an ideal fluid, development of the wing theory, properties of airfoils, engine and propeller characteristics, performance calculations, and stability.

3. *Aeronautical Laboratory.* (2)

Laboratory exercises, such as the determination of airfoil characteristics, the effect of auxiliary lifting devices, lift, drag, and moment coefficients, and wind-tunnel calibration are carried on. Use is made of the smoke-tunnel to study air flow about various aircraft shapes. Allied tests are made on such equipment as gauges, fluid flow meters of all types, air blowers and pumps.

Experiments are carried on in the internal combustion laboratory where various engines are tested and experiments dealing with fuels and lubricating oils are made.

Detailed reports are required of each experiment.

4. *Airplane Design.*

The object of this course is to acquaint the student with the methods of practical airplane design as prescribed by the Civil Aeronautics Authority. The student will begin with the specifications of an airplane and complete the following phases of the design: (1) balance diagram, (2) weight estimate and balance table, (3) three view drawing, (4) estimate performance, (5) calculate stability, (6) stress analysis of the structure.

Students must have completed a course in Aerodynamics or must be taking it concurrently with this course.

5. *Airplane Engines.*

Essentially a course in internal combustion engines, it deals with an exhaustive study of engine thermodynamics, emphasis being placed on the standard-air Otto and Diesel cycles. Many problems are solved to demonstrate the importance of compression ratios, variable specific heats, volumetric efficiency, and engine performance.

Fuels and their combustion are studied and calculations of theoretical and excess air are made based on fuel compositions, products of combustion, and experimental Orsat data.

A study is made of the functions and design of the moving parts in an aircraft engine. Problems in strength of materials are solved in the design of crankshafts, connecting rods, and valve springs. The effect of high tempera-

tions and the heat treatment of metals are discussed in regard to the proper design of cylinders and valves. Other problems dealing with engine dynamics, inertia forces and balance are considered.

Detailed studies are made of carburetion, ignition, and lubrication; in addition to auxiliary equipment.

6. *Applied Mechanics. (Prerequisite, Physics)*

A course of lectures and recitations comprising a study of the general methods and application of statics to structures in equilibrium, including collinear, concurrent, parallel, and nonconcurrent force systems in a plane and in space; centroids and moments of inertia. Considerable time is devoted to tension and compression in frames, the computation of reactions, the method of joints and of sections, and in the manner of distinguishing members containing bending stresses. Vector diagrams are drawn to show the principles of graphical methods. Problems are used and assigned continuously to illustrate the underlying facts of the subject.

7-8. *Chemistry, Analytical. (Prerequisite, Inorganic Chemistry)*

Qualitative Analysis—Lectures and Laboratory—First Semester.

Lectures and recitations are carefully co-ordinated with laboratory work. Not only is the detection of the common cations and anions considered but also the theoretical principles relating to hydrolysis, solubility product, ionic equilibrium, amphoteric substances, complex formations, oxidation and reduction, correct concentrations, etc. Sequentially related experiments which may be combined in a complete system of analysis are performed. From time to time unknown solutions and substances are given the student, the analysis of which emphasizes the very practical side of the work.

Quantitative Analysis—Lectures and Laboratory—Second Semester.

The major operations of quantitative analysis, such as weighing, measurements of volumes, titration, filtration, ignition, and combustion are considered both from the theoretical and the manipulative aspects.

Typical analyses and common technical methods are discussed critically, and unknown solutions and substances, the analysis of which involves volumetric analysis, including acidimetry and alkalimetry, oxidation and reduction, and precipitation methods, are analyzed.

Each analysis requires correct calculation as well as careful analytical procedure. For this reason quantitative calculations are studied through the medium of representative problems.

9-10. *Chemistry, Inorganic, Lectures and Laboratory. (Prerequisite, Elementary Chemistry, Engineering Mathematics. It is also recommended that students have completed a course in high school Physics.)*

This course builds on the foundation laid by the student in his previous study of Elementary Chemistry and allied subjects. It aims to develop in the student an understanding of numerous laws, principles, facts of Chemistry, and to provide him with the preparation necessary for successful pursuit of more specialized work to which he may be looking ahead. The course should prove of value to those at present engaged in the field of Chemistry and to those who plan to enter that field. The work of the course embraces general class sessions or lectures, and separate laboratory periods.

In the lectures, the instruction is accompanied by appropriate demonstration experiments; adequate time is devoted to the solution of numerical problems that illustrate chemical principles and their application; students' difficulties are discussed; quizzes and longer tests are held at the discretion of the instructor.

During laboratory periods, students work out under supervision a variety of experiments involving procedures both of a qualitative and of a quantitative

nature which are planned to illustrate important principles or facts; desirable laboratory methods are emphasized; principles and results are discussed. The student is required to make approved records of experiments.

11-12. *Chemistry, Organic, Lectures and Laboratory. (Prerequisite, Inorganic Chemistry, Analytical Chemistry)*

Lectures.

In this course the student obtains a thorough foundation in the principles and theories of organic chemistry. These are presented in a manner that emphasizes the relationships existing among the various classes of organic compounds. The practical nature of the subject is stressed by familiarizing the student with the industrial applications of these theories and principles to such industries as petroleum, rubber, dyes, explosives, drugs, etc.

Laboratory.

The carefully selected preparations serve to give the student concrete evidence of the validity of theories and principles of organic chemistry. They also help in developing the laboratory technique necessary in such manipulations as fractional distillation, physical and chemical separations, extractions, crystallizations, steam distillations, etc.

The fundamental types of chemical changes considered here are esterification, saponification, sulfonation, nitration, reductions, diazotizations, and condensation.

13. *Concrete. (Prerequisite, Applied Mechanics)*

A consideration of the theoretical and practical principles involved in the design of concrete and reinforced concrete structures. The following subjects are thoroughly discussed: the manufacture of Portland Cement; the specification requirements for fine and coarse aggregates, followed by the design of a concrete mix; the design and capacity of existing single reinforced rectangular beams, double reinforced rectangular beams, and "T" beams; the fundamental principles underlying diagonal tension and bond stress; column design and methods of determining stresses in existing columns; the origin of curves and tables and their uses. Problems involving the above types of sections, first by the transformed area method and later by curves and tables, are done by the students.

14. *Concrete Design. (Prerequisite, Concrete)*

This course will consist of the design of a cantilever retaining wall, retaining wall with counterforts, a typical bay of a reinforced concrete building, footing design, and a reinforced concrete bridge. The course will also include a detail discussion of the Hardy Cross method of moment distribution, column analogy, and a comparative discussion of stress analysis in rigid frames.

15. *Electricity I.*

A course of lectures and problems designed to give the student the necessary concept and understanding of the elements of electricity to enable him to comprehend the courses to follow in direct and alternating current machinery and circuits.

In the second semester lectures and problems covering the characteristics, losses, efficiencies, and operation of direct current machinery.

16. *Electricity II.*

A course of lectures and problems dealing with alternating current circuits both single and polyphase involving the use of complex algebra.

In the second semester lectures and problems covering the construction, theory, characteristics and testing of the various types of alternating current machinery.

(This course is coordinated with appropriate laboratory work. Course 18.)

17. *Electricity III.*

A course of lectures and problems dealing with the transmission and distribution of electric power by means of direct and alternating current. A complete study of the application of the various types of electrical machinery to industry.

In the second semester lectures and problems covering the principles, characteristics, and applications of electronic tubes to industrial and commercial processes.

(This course is coordinated with appropriate laboratory work. Course 19.)

18. *Electrical Laboratory (Prerequisite, Electricity I)*

This course comprises a group of experiments so selected as to cover thoroughly the methods of testing direct current motors and generators. Toward the end of the course work will also be included on fundamental alternating current circuits and on transformers. Reports are written on all tests performed in order to give the student an appreciation of the meaning of the results obtained.

Typical experiments are load tests on Shunt, Series, and Compound motors; Conventional Efficiency determined from no load test; Heat Run; Speed Control of direct current motors; Operating Characteristics of Shunt and Compound generators; Operation of Direct Current Generators in Parallel; Alternating Current Series and Parallel Circuits; Transformer Efficiency and Regulation determined from no load tests.

19. *Advanced Electrical Laboratory (Prerequisite, Electrical Laboratory and Electricity II)*

This course includes tests on many different types of alternating current motors, generators, transformers, and rectifiers. Reports are written on the tests performed as in the previous course in Electrical Laboratory. The apparatus available for testing is sufficiently diverse so that experiments can be selected to fit the interests and need of individual students.

Typical experiments include the following: Load test on Synchronous Generator; Determination of the Voltage Regulation of an Alternator by the American Standards Association Method; Tests on several different types of Induction Motors; Determination of the V-curves and Efficiency of a Synchronous Motor, Load Test on Steel Tank Mercury Arc Rectifier.

20. *Engineering Drawing.*

This course is planned to meet the requirements of a class composed of students who have had no previous instruction in drafting, and also for those who may have had one or two years' work in preparatory schools.

Instruction is given in the testing, use and care of the instruments and drawing supplies, and about thirty drawing plates are constructed. The topics studied in these plates include: technique practice, lettering, geometric construction, orthographic projections, auxiliary views, revolution of objects, isometric, cavalier, cabinet and perspective projection, intersections, sections, helix and application, screw threads, dimensions and inking. A number of practical problems, pertaining to the professional courses to be taken, in which drawing is the application, are also given.

These give the student a thorough training in the fundamental principles of mechanical drawing, so that he may easily do the drafting required in his professional course. A short lecture will be given at the opening of each class based on the work at hand, and individual instruction is given during the remainder of the class period.

For those who have had some experience in Mechanical Drawing, a special course is devised which will take care of individual needs and offers students more advanced work.

21. *Engineering Laboratory. (Prerequisite, Heat Engineering)*

This course includes a series of experiments upon various kinds of equipment used in modern power plants to demonstrate under actual conditions the principles developed in the Heat Engineering course. Additional experiments which include calibration of instruments, performance of hydraulic equipment, steam equipment as used in power plants, heating units for the household, air conditioning apparatus, and internal combustion engines, testing materials are performed. A complete report of each experiment is made.

22. *Engineering Mathematics. (Prerequisite. First courses in Algebra and Plane Geometry)*

Although the primary purpose of this course is to lay a thorough ground work for the subsequent courses in Analytical Geometry, Calculus, and Applied Mechanics, it is nevertheless a complete unit in itself, and will enable the student to handle a considerable number of the problems arising in engineering practice.

Proceeding from a rapid review of the fundamental operations of Algebra, the work continues with a thorough study of fractions, linear and quadratic equations, graphs, exponents, logarithms, binomial theorem and related topics.

About one-third of the time is devoted to a course in Plane Trigonometry. This includes the solution of all triangles by both natural and logarithmic functions, identities, radian measure, principal values and the solution of trigonometric equations. Particular attention is given to the applications of Trigonometry to engineering practice.

Early in the course complete instruction is given in the theory of the slide rule, and considerable practice in its use.

23. *Engineering Structures. (Prerequisite, Strength of Materials)*

First term is an introductory course covering outer forces, reactions, moments and shears for fixed and moving loads. The manufacture of steel as it relates to its structural characteristics is discussed. The use of influence lines, the stress analysis of composite beams, torsion in rivets, three moment equations, design of a deck plate girder bridge, and through plate girder bridge. Each student must design a deck plate girder bridge.

Second term deals with the computation of stresses of various trusses by the moving up load method and equivalent uniform live load method. Stresses in portals; slope deflection method and Hardy Cross method of stress distribution in rigid frames.

24. *Heat Engineering. (Prerequisite, Physics)*

The fundamentals of thermodynamics are discussed in this course and include the general theory of heat and matter; first and second laws of thermodynamics; equations of state; fundamental equations of thermodynamics; laws of perfect gases; properties of vapors including use of tables and charts; and the general equation for the flow of fluids. Particular emphasis is given to the properties of steam, the use of the steam tables, and the Mollier diagram.

The course also embraces a study of fuels and combustion of fuels as applied to steam boilers.

The purpose of the course is to familiarize the student with the theory of heat as applied to prime movers.

Descriptions of many different kinds of apparatus used in the steam power plant such as engines, turbines, and auxiliary equipment, including pumps, condensers, heaters, fans, etc., comprise the major part of the course. A large number of problems related to the apparatus discussed are solved. In addition to the above, such items as draft, chimneys, coal and ash handling equipment, piping and valves, and typical power plants are studied. In addition to the study of steam apparatus, air compressors and internal combustion engines are discussed.

25. *Highway Engineering.*

An outline of the principles governing the finance of highway projects. Thorough discussion of the survey for a highway project. Lectures on the fundamental principles of highway design. Various present-day road surfaces are discussed. A study of the fundamental principles of soil mechanics as it relates to Highway design.

26. *Hydraulics. (Prerequisite, Applied Mechanics)*

This course is a study of the principles of both hydrostatics and hydrodynamics. The subjects considered are: the pressure on submerged areas together with their points of application; the laws governing the flow of fluids through orifices, short tubes, nozzles, weirs, pipe lines, and open channels; Reynolds numbers; and viscosity.

27. *Machine Design. (Prerequisite, Mechanism)*

This course applies to machines the principles of which were presented in Course 29. Typical problems presented for design are the triplex power pump, power shearing machine, and a twenty ton hydraulic press.

Minimum sizes of the various parts are calculated and an assembly of the complete machine is drawn and traced. All calculations are carefully presented in notebook form.

Also, numerous miscellaneous small problems are taken up.

28. *Machine Drawing. (Prerequisite, Engineering Drawing)*

This course is taught on a problem basis with the student working out problems under the supervision of the instructor. The lectures and leading assignments correlate with the class problems. Short quizzes are given to cover the reading assignments. The principles covered include preliminary machine sketches, detailing from machines and from assembly drawings, dimensions with reference to basic size system, sectioning and the making of assembly drawings from details, and also problems in cam and gear construction.

The lectures and assigned readings take up such topics as fastenings, machine elements, methods of manufacture, jigs and fixtures, methods of reproducing drawings and those drawing techniques that are to be applied to the particular problem being done.

29. *Mechanism (1). (Prerequisite, Machine Drawing)*

The object of this course is to acquaint the student with the principles of mechanism which are met in practice and in machine design. The topics considered are belting, pulley, and gear train calculations, both simple and epicyclic, cam design and theoretical design of gear-tooth shapes. The instant center calculations and velocity diagram plots or common linkages are studied.

30. *Physics.*

A course covering the fundamental principles of mechanics, heat, and electricity. The lectures are illustrated both by demonstration with apparatus and by stereopticon. Each lecture period is supplemented with a problem period in which the student learns the practical application of the laws of physics. Some of the topics taken up in mechanics are equilibrium, center of gravity, accelerated motion, work, energy, machines, and fluid pressure. The part of the course on heat includes: expansion of solids, liquids and gases, calorimetry and mechanical equivalent of heat. The course also covers the fundamentals of electricity. Practical problems covering each phase of the work are assigned to fix in the mind of the student the principles taken up in the lecture period.

31. *Strength of Materials. (Prerequisite, Applied Mechanics)*

This course comprises the study of the stresses and strains in bodies subjected to tension, compression, and shearing; common theory of beams with thorough description of the distribution of stresses, shearing forces, and bending moments; deflection of beams.

A study is made of the strength of shafting and springs; combined stresses in beams subjected to tension, compression, and bending; also strength of riveted joints, columns, and thin hollow cylinders, and brief consideration of strains and the relation of the stresses on different planes in a body.

32. *Structural Design. (Prerequisite, Structural Drawing and Strength of Materials)*

This course consists of a study of the design of such structural units as steel beams, girders, columns, trusses, riveted connection and steel frames as a whole. Particular attention is given to the practical phases of construction and their relation to design. The design of structural timber is also studied. In the first half of the year the student is given many problems which he works out at home and in class and the last half of the year is usually devoted to the design and detailing of some larger, more complicated structures or portions of structures.

Students with a previous record of study in Structural Design may be admitted to this course for work of an advanced nature. Individual problems may be assigned, such as the design of a highway or railroad, a bridge, a roof truss or a portion of an office building.

33. *Structural Drawing. (Prerequisite, Engineering Drawing)*

The course in Structural Drawing consists of making shop drawings of the various members of modern steel frames. After making drawings of structural sections and standard connections, the student is given data from which he makes framing plans and shop details. The problems usually covered are: portions of a steel frame building, a bridge girder, and a roof truss.

34. *Sub-Freshman Mathematics.*

The first part of this course is devoted to a thorough study of Algebra and Plane Geometry. It then proceeds to more advanced work embraced by the course in Engineering Mathematics as described in Course 22.

35. *Surveying. (Prerequisite, Engineering Mathematics)*

(a) A course of lectures, which treats the basic principles such as: taping, compass, theory and use of the transit as applied to both random and closed traverses, differential leveling, profile leveling, and double-rod leveling. The D.M.D. and rectangular coordinate methods (of computing, plotting and running traverses) are stressed and especially as they may apply to such work or procedure as outlined by the Massachusetts Land Court.

(b) A continuation of Surveying (a), consisting of lectures and problems on simple curves (railroad curves and circular arcs), vertical curves, compound Stadia surveying, the theory and use of the plane table, plane triangulation curves, and elementary earthwork problems.

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Fully accredited by the New England College Admissions Board General, Classical, and Technical high school courses are available.

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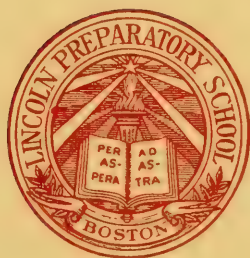
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EVENING SESSIONS

Catalog for 1943-1944

FORTY-SIXTH YEAR

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For College

Courses preparing students for the entrance examinations of all colleges and for the examinations of the College Entrance Examination Board.

Courses preparing students for recommendation for entrance by certificate (without examination) to those colleges that admit by the certification method.

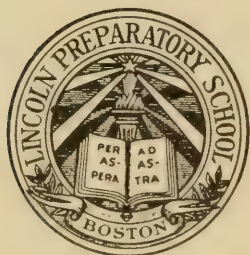
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WHERE MANY OF THE LINCOLN PREPARATORY SCHOOL CLASSES ARE HELD

CALENDAR

Summer Term, June, 1943–September, 1943

May 24–June 7	Registration period.
June 7–8	Classes begin.
September 6	Legal holiday. No classes.
September 7–10	Final examinations.

School Year, September, 1943–May, 1944

1943

September 6–20	Registration period.
September 20, 21	Classes begin.
October 12	Legal holiday. No classes.
November 11	Legal holiday. No classes.
November 25	Thanksgiving Day. No classes.
December 23	Last session before Christmas recess.

1944

January 3	Classes resume.
February 22	Legal holiday. No classes.
April 19	Legal holiday. No classes.
May 8–12	Final examinations.

Winter Term, January, 1944–May, 1944

January 3–10	Registration period.
January 10, 11	Classes begin.
February 22	Legal holiday. No classes.
April 19	Legal holiday. No classes.
May 22–26	Final examinations.

OFFICE HOURS

August 16, 1943–June 10, 1944

Week days, except Saturday	9 a.m. till 8.30 p.m.
Saturday	9 a.m. till 1 p.m.

June 12, 1944–August 12, 1944

Monday, Wednesday, and Thursday	9 a.m. till 5 p.m.
Tuesday and Friday	9 a.m. till 5 p.m.; 6 p.m. till 8 p.m.
Saturday	9 a.m. till 12 noon

INTERVIEWS

Prospective students, or those desiring advice or guidance with regard to any part of the school work or curricula, are offered without obligation personal interviews with the Headmaster or his assistants. No inquirer should hesitate to ask for an appointment as, in the long run, time is saved during the school year by having the whole educational problem discussed before the opening of the School.

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Assistant Headmaster

JOHN MOORE TROUT, JR., A.B., Ed.M.
Counsellor for Students

FACULTY

WALTER E. ANTUNES

Appointed 1941

B.S. Boston University, 1930; M.A. Boston University, 1932; Instructor in Biology, Long Island University, New York, 1931-33; Instructor in Science, Wakefield High School, 1936-.

Chemistry

WALTER ALFRED BALDWIN

Appointed 1910

A.B. Ohio Wesleyan University, 1906; graduate study University of Chicago and Harvard University; Head, Department of Mathematics, Chillicothe High School, Ohio, 1906-08; Head, Department of Mathematics, Mansfield High School, Ohio, 1908-10; Head, Science Department, Huntington School for Boys, Boston, 1912-14; Instructor in Physics and Chemistry, Lincoln Preparatory School, 1910-.

Chemistry

WILLIAM TILDEN BENTLEY

Appointed 1916

A.B. Harvard University, 1907; Submaster, Malden High School, 1914-24; Principal, Belmont School, 1924-29; Principal, Charles A. Daniels School, 1929-.

History

CHARLES LEE CHEETHAM

Appointed 1928

A.B. Bates College, 1911; A.M. Columbia University, 1927; Instructor in Mathematics, Portsmouth High School, New Hampshire, 1912-14; Submaster, Westerly High School, Rhode Island, 1915-17; Instructor in Mathematics and Science, Tower Hill School, Wilmington, Delaware, 1919-23; Instructor in Mathematics and Physics, Roger Ascham School, White Plains, New York, 1923-27; Instructor in Science, Mathematics and Physics, Public Latin School, Boston, 1928-.

Physics

CARL F. CHRISTIANSON

Appointed 1933

A.B. Wesleyan University, 1923; Tilton School, New Hampshire, 1923-24; Abington High School, 1924-27; Huntington School for Boys, 1927-.

History

HERBERT A. CLARK

Appointed 1942

Ph.B. Brown University, 1927; M.A. Brown University, 1931; Ed.M. Harvard University, 1940; Instructor, Barre High School, 1931-32; Principal, Stow High School, 1932-35; Headmaster, Peterborough High School, New Hampshire, 1935-37; Instructor in History, Newton High School, 1937-.

History

MICHAEL D'AMELIO

Appointed 1942

A.B. Harvard College, 1922; Instructor, Brookline High School, 1922-26; Instructor, Boston Latin School, 1926-27; Instructor in Mathematics, English High School, 1927-.

Mathematics

PERCY EDWARD JONES

Appointed 1923

Sloyd Training School, 1920; B.S. Boston University, 1930; Instructor in Mathematics and Drawing, Huntington School for Boys, 1919-.

Mathematics

ALFRED BLANCHARD KERSHAW**Appointed 1928**

A.B. Amherst, 1904; A.M. Amherst, 1907; Instructor, The Allen School, West Newton, 1908-09; Instructor in English, Brockton High School, 1909-11; Master, English High School, Boston, 1911-.

*English***MARSHALL NEWTON****Appointed 1940**

A.B. Dartmouth College, 1925; M.A. Harvard University, 1929; Instructor, Bowdoin College, 1928-30; Instructor, Massachusetts Institute of Technology, 1931-32; Instructor, Tufts College, 1933-.

*Spanish***THEODORE WOODS NOON****Appointed 1922**

A.B. Yale College, 1896; M.A. Yale University, 1898; Exhibitioner, Emmanuel College, University of Cambridge, England, 1906-07; Master, Lawrenceville School, Lawrenceville, New Jersey, 1908-18; B.D. University of Chicago, 1913; S.T.M. Boston University, 1922; Ed.M. Harvard University, 1924; Instructor in Lincoln Preparatory School and Huntington School for Boys, Boston, 1922-.

*Latin and Ancient History***DEANE STANFIELD PEACOCK****Appointed 1931**

A.B. Bowdoin College, 1917; A.M. Bates College, 1927; Ed.M. Harvard University, 1932; Principal, Oakland High School, Maine, 1919-24; Principal, Freeport High School, Maine, 1924-31; Junior Master, English High School, Boston, 1932-.

*History***BARNET RUDMAN****Appointed 1942**

A.B. Harvard University, 1921; Ed.M. Boston Teachers' College, 1934; Instructor in Mathematics, Rocky Grove High School, Franklin, Pennsylvania, 1921-23; Instructor in Mathematics, Pittsfield High School, 1923-28; Head of the Department of Mathematics, 1927-28; Instructor in Mathematics, South Boston High School, 1929-32; Instructor in Mathematics, English High School, 1932-.

*Mathematics***CHARLES FREEMAN SEAVERN****Appointed 1914**

Harvard University, 1915-17; Instructor in Mathematics and Drawing, Huntington School for Boys, Boston, 1914-19; Instructor, Everett High School, 1925-.

*Mathematics***ALBERT SHEPARD****Appointed 1938**

A.B. Harvard University, 1913; A.M. Harvard University, 1914; Ph.D. Harvard University, 1916; University of Chile, 1916-17; Akron University, 1917-18; Norwich University, 1918-20; Albany Boys' Academy, 1920-22; University of North Carolina, 1922-26; Belmont Hill School, 1926-35; Tilton School, 1936-37; Brookline High School, 1937-.

*French***ALFRED LORING SKINNER****Appointed 1927**

A.B. Harvard University, 1919; Instructor in Mathematics, North Andover, Massachusetts, 1919-22; Instructor in Mathematics, Huntington School for Boys, Boston, 1922-.

Mathematics

PAULINE FRANCES SULLIVAN

Appointed 1942

A.B. Regis College, 1935; M.A. Radcliffe College, 1938; Instructor, Wheaton College, 1938-39; Instructor, The Winsor School, 1939-40; Instructor, Choate School, 1940-.

Biology

JOHN MOORE TROUT, JR.

Appointed 1936

A.B. Princeton University, 1928; Ed.M. Harvard University, 1932; Instructor at Huntington School for Boys, 1928-.

English

EDNA M. EDISON, *Executive Secretary*

MILDRED L. PRATT, *Stenographer*

MILDRED L. SPRAKER, *Stenographer*

HISTORICAL STATEMENT

The Lincoln Preparatory School, affiliated with Northeastern University and known for many years as the Northeastern Preparatory School, had its real beginning in 1897 in the separate evening courses offered in History, Science, and other subjects of a cultural nature, and in certain trade courses intended to benefit men engaged in various occupations.

Gradually the trade courses were discontinued and the remaining subjects were welded into a regular high school program, upon the completion of which a standard high school diploma was awarded.

All classes in the Lincoln Preparatory School are held in the evening and are especially designed to meet the needs of those who are employed during the day.

The primary purpose of the School has been effective preparation of students for college entrance. For this reason constant attention has been paid through the years to the maintenance and improvement of standards.

In 1925 women were admitted to classes on the same basis as men. Since 1924 the School has been accredited by the New England College Entrance Certificate Board, now called the New England College Admissions Board. This is a marked distinction in the case of an evening school, and an expression of confidence that day school standards are maintained. The School today offers curricula in the general, scientific, and classical fields. The enrollment has increased from fewer than fifty students to almost six hundred, of whom one-fourth are women. The faculty has been increased until it now numbers from twenty to twenty-five men of wide experience and training, drawn from the leading day preparatory and high schools of Metropolitan Boston.

Through the Lincoln Preparatory School many men and women have been able to solve their problems and to secure that education which has enabled them to succeed in the work for which they are adapted by ability and interest. Without these facilities many of these alumni would still be occupying minor positions with little opportunity for advancement on account of lack of training.

THE NEED FOR EDUCATION

In times of war and during an industrial "boom," education is likely to be neglected. Young men and women become interested in high wages, which they forget are only temporary, and they may disrupt their educational plans for fleeting gain. But wars cease and "booms" are generally followed by depressions with grievous results to those same men and women.

The foresighted individual then comes into his own. He has completed his formal high school work, and is ready for specialized training if he has not already begun it. He is the best investment for the employer who must get the most for his money.

Furthermore, quite apart from the financial benefits to be gained later as a result of education and training now, it would be unwise for an individual not to complete his high school work. While unemployment is at a very low figure, two thoughts should be kept in mind.

First, the competition for post-war jobs will be keen, and an applicant who has not finished high school will have little chance, except in blind-alley occupations with no future.

Second, those who are high school graduates, particularly women, should realize the great service they can render the nation by equipping themselves to the utmost of their ability to contribute in this emergency. Students are needed with a knowledge of all branches of Mathematics, Physics, Chemistry, Biology, Drafting, Electricity, and many other subjects. The fundamental training for such work is readily available to those who are ambitious and patriotic.

THE VALUE OF PLANNING

A realization of the stern facts bring one to the conclusion that education is not a "hit or miss" job but one that requires careful planning. The first step, of course, is to complete one's high school work. That should not be left undone. Such an omission half a century ago might not, probably would not, have been serious. But today it can be a calamity. On this foundation of high school work there can then be built a variety of structures: engineering training, nurses' training, business training, professional work of many kinds to which the individual may be adapted.

It is interesting to note that such work may now be done at convenient evening hours while the student pursues his regular day-time employment. Nothing stands between a prospective student and the completion of his high school work except the extent of his ambition.

Metropolitan Boston is rich in evening educational opportunities. The Lincoln Preparatory School is an accredited evening school maintaining day-school standards of performance, and enjoying for many years the confidence of the New England College Admissions Board, on whose approved list it stands. Counsellors are always available for interviews and careful thought is given to the problem of each individual.

THE LINCOLN PREPARATORY SCHOOL

CHARACTERISTICS OF THE SCHOOL

Before a prospective student makes a final decision regarding the evening school he wishes to enter, he should ascertain some of the characteristics of a good preparatory school. Following are the outstanding characteristics of the Lincoln Preparatory School:

1. It is non-proprietary, and organized exclusively for service to students, the income being devoted to that end, rather than being organized for profit.
2. Adequate fees are charged to insure the employment of the best teachers attainable and to provide constant improvement in the educational processes.
3. Scholarship funds are available to assist deserving and needy students who cannot meet the fees that must be charged if high standards are to be maintained.
4. It has a trained and experienced faculty; that is, the men who form its staff are teachers of experience with long practice in dealing with the individual problems of students.
5. All work is conducted on a regular classroom basis to meet the approval of higher institutions and the New England College Admissions Board requirements.
6. The size of the classes is such as to permit reasonably individualized attention.
7. The courses are conducted so that the content of each course is thoroughly covered in order that it may be of the maximum value to the student, not only in the interests of his personal growth, but as preparation for further study.
8. The student body is adequately prepared for the type of instruction which is to be imparted in the classroom. The level of achievement is not lowered by the admission of unfit students.
9. High quality of performance is maintained in the classroom, and students bring to bear on their studies an interest and enthusiasm which permit all work to be conducted on a high, qualitative plane. Classes are not conducted to be a vehicle by which students may obtain credit by easy and slipshod methods. Credit is awarded only when the quality of the student's work meets the definition of Requirements of the College Entrance Examination Board and the New England College Admissions Board.

10. Its graduates have proved successful in college, in the professions, and in business life.
11. There are adequate laboratories, classrooms, and other facilities.
12. The employment of a full-time administrative organization affords opportunities for skilled educational and vocational guidance.

AIMS OF THE SCHOOL

The aims of the Lincoln Preparatory School may be classified as follows:

1. The offering of educational opportunities to men and women by methods of instruction carefully adapted to the needs of adult students.
2. The providing of this instruction at convenient evening hours, so that the student need not leave his or her present employment while obtaining an education.
3. The conducting of the school work on such a high qualitative plane that those students who wish to prepare for college may be adequately prepared for entrance examinations, or for entrance by certificate if their ability and performance warrant.
4. The offering of a general program to those who do not plan to enter college, that they may develop a taste for the better things in life and that they may advance to a larger personal growth.
5. The offering of special courses for those who have particular needs related to war work or other specialized occupations.
6. The selection of the most competent and experienced faculty available.
7. The maintenance of the excellent work which has earned for the School the approval of the New England College Admissions Board.
8. The personal interest of every school officer in the individual problem of the student.

LOCATION OF THE SCHOOL

The work of the School is conducted in the following four buildings of Northeastern University situated on an eight-acre campus on Huntington Avenue just beyond Massachusetts Avenue opposite the Boston Opera House and at the entrance to the Huntington Avenue subway.

Richards Hall is situated at 360 Huntington Avenue. This building has more than a hundred thousand square feet of space and is adequately equipped with classroom, drawing room, and laboratory facilities. In the basement are the checkroom, the bookstore, and the Husky Hut.

New Building. This building, completed and occupied in November, 1941, contains forty-two thousand square feet of floor space. In this building are located the Chemical Engineering and Biological laboratories, a large Commons room open to day and evening students, and eighteen classrooms and lecture halls.

The East Building consists of an area of forty thousand four hundred and twenty square feet of space in which are situated the University library, several classrooms, and the Chemical laboratories.

The South Building is situated in rear of the East Building and consists of twenty-six thousand five hundred and sixty square feet of space containing several classrooms and the Electrical laboratories.

ALUMNI

The Alumni of the Lincoln Preparatory School are excellent witnesses of the work the School has done and is doing.

Many of our graduates are engaged in the various professions, such as Engineering, Law, Medicine, Teaching, and Dentistry, or are engaged in successful business activities and in public life. Furthermore, the School has been of benefit to many who did not complete our graduation requirements but obtained here the credits necessary for college entrance or for some other specific purpose, having completed elsewhere part of their high school training.

Women graduates of this School are in the hospital training schools of the State or have graduated therefrom. Some occupy

teaching and administrative positions in our hospitals. Many others have proceeded to colleges and professional schools to prepare for positions in teaching, library science, and business.

Our former students are in colleges and professional schools scattered across the country. The following are some of the colleges that have been attended by Alumni of the Lincoln Preparatory School:

Harvard University
Tufts College
Massachusetts Institute
of Technology
Boston University
University of Michigan
Jackson College
Purdue University
University of Alabama
Columbia University
Colby College

Simmons College
University of Maine
Clark University
Massachusetts State College
University of Chicago
Syracuse University
Yale University
Dartmouth College
Bowdoin College
Bates College
Northeastern University

FACULTY

In an evening school it is particularly essential that the faculty be very carefully chosen. This is the case in the Lincoln Preparatory School, where the members of the faculty contribute to the success of the students because of the following characteristics:

- (a) They are graduates of the leading colleges and universities;
- (b) they are men of culture and high ideals;
- (c) they are in sympathy with evening school students and understand their aims;
- (d) they have had excellent training and wide experience in the subjects they teach;
- (e) most of them have served with the School for many years and take a personal interest in its aims and success;
- (f) all are at present employed during the day in the leading high and preparatory schools in Boston and vicinity.

STUDENT BODY

The students of the Lincoln Preparatory School are men and women of earnest purpose, who have come to recognize the value of education but who through force of circumstances have been unable to complete a high school course. The ages of the students range from fifteen to fifty-one, with the average age twenty-two.

Some students are attempting to increase their vocational opportunities; some are completing a high school education begun elsewhere but interrupted; some are beginning here their high school work; some are adding to their training cultural or practical subjects which were formerly omitted; some are undertaking special courses to prepare them for increased usefulness in war work. In fact, the School is ready to serve students of all ages at a point where they need real service. The student body represents also men and women from all walks of life.

INFORMATION REGARDING ADMISSION

ADMISSION REQUIREMENTS

Any man or woman of good moral character, regardless of occupation, race or creed, who has completed at least eight grades of a grammar school, or the equivalent, may enroll in the School.

The courses offered are designed to prepare students to enter institutions of higher learning. Those students, however, who do not intend to proceed to higher institutions may select from the offering of courses a special combination of subjects which will benefit them in the work in which they are engaged during the day. Before enrolling for such subjects, students are urged to see the Headmaster, explaining the particular nature of the employment in which they are engaged, so that he can arrange the program best suited for their needs. Special combinations of subjects may be selected to embrace business, science, or special technical work.

APPLICATIONS FOR ADMISSION

Students who plan to enter the School must file the official application blank which must be accompanied by the registration fee of five dollars. All applications for admission should be filed as early as possible in order that the status of each student may be definitely determined and a satisfactory program arranged before the actual opening of the term.

CREDIT FROM OTHER SCHOOLS

Students who have completed high school work in other approved institutions may obtain credit for that work towards the diploma of this School by presenting a certified transcript of record from the school previously attended. The officers of the School are glad at all times to obtain for prospective students transcripts of their records of work at other schools, evaluate such records in terms of diploma credits and suggest a program, indicating the cost of the program and the time necessary to meet graduation requirements.

The responsibility devolves upon the student for making sure that his program does not contain a subject for which prior credit has already been awarded in some other school. Such courses, however, may be taken without credit as review courses preparatory to later advanced work.

TUITION FEES

Registration Fee. \$5 is payable by all students on their initial entrance to the School. This fee is not returnable except where a student is refused admission.

PAYMENT PLANS

For each term indicated below is listed the payment plan appropriate for each term. When these plans are adopted, they must be rigidly adhered to. *In certain cases, however, even the special plan of payment will not meet the needs of many deserving students. Such students are requested to confer with an officer of the School who will arrange a satisfactory plan for the payment of fees.*

REGULAR TERM AND WINTER TERM

The Regular Term begins in September and continues for 32 weeks. During this term students may carry three full-unit courses.

The Winter Term begins in January and extends for 20 weeks. The work is carried on more intensively than in the Regular Term, but the same ground is covered, primarily by means of a longer classroom period. During this term students are permitted to carry two full-unit courses.

The cost of each course is \$40. Fees are payable in monthly installments. The first installment is due on registration; thereafter payments are due on the first Tuesday of each month.

SUMMER TERM

The Summer Term begins in June and extends for 15 weeks. During this term students may carry two full-unit courses. A full year's work is covered in each course.

The cost of each full-unit summer course is \$30. Fees are payable in three successive monthly installments.

The first installment is due on registration. Subsequent payments are due on the third Tuesday of July and August.

SPECIAL RATES FOR SCIENCES

Biology

Tuition fee	\$40.00
Laboratory fee	5.00

Physics

Tuition fee	\$40.00
Laboratory fee	5.00

Chemistry

Tuition fee	40.00
Laboratory fee	5.00
Laboratory deposit	5.00

The unused portion of the chemistry deposit is refunded after deduction for breakages and for non-returnables.

CHARGES FOR PARTIAL ATTENDANCE

In the event of a student's withdrawal from school, he is charged on a *pro rata* basis for the weeks he has attended. These charges are as follows:

32-week courses — *4 per cent of the total charges for each week of attendance in each semester.*

20-week courses — *6 per cent of the total charges for each week of attendance in each half turn.*

15-week courses — *8 per cent of the total charges for each week of attendance.*

The same charges are applicable in the event that a student abandons a part of his program. In addition the full Laboratory Fee is charged in those cases where a student is pursuing a laboratory course.

TUITION REGULATIONS

SCHOLARSHIPS

The Executive Council has made available a few scholarships to assist needy students of good mental capacity who, because of financial limitations, might be deprived of educational opportunities. The award when a scholarship is granted is never in excess of one-half of the student's tuition fees for the year.

LATE REGISTRATION

Those who find it necessary to register late may at the discretion of the Headmaster be permitted to enter the School provided they have not lost so much work as to render it impossible for them to proceed with the courses.

No reduction in fees is made because of late enrollment.

REFUND POLICY

Students who are forced to withdraw from a course or from the School are required to notify the school office by completing the withdrawal blanks which will be furnished.

Since the School assumes the obligation of carrying the student throughout the year for which he registers, and since the instruction and accommodations are provided on a yearly basis, the Officers of Administration have ruled as follows:

- A. The registration fee is not refundable.
- B. *Applications for refunds must be presented within forty-five days after withdrawal from School.*
- C. Refunds in the case of complete withdrawal from School will be granted by the Committee on Withdrawals for reasons which they deem adequate. Among the reasons deemed adequate are the following:
 - (a) Personal illness.
 - (b) Change of employment by direction of employer, whether in the schedule of time or in place of employment.
 - (c) The situation where the student becomes the sole or partial support of the family, so as to make it impossible for him to continue his studies.
 - (d) Loss of position.
 - (e) Change of residence.

- (f) A voluntary change of employment, the hours or the residence being such that he is unable to continue attendance.

In all the above cases it is expected that a medical certificate, letter from employer, or other appropriate substantiating documentary evidence will be produced by the student.

- D. Refunds are computed from the date of application for refund, not from the date of last attendance; hence students who are compelled to discontinue attendance should immediately report the fact to the school office.

EXAMINATION FEES

The fee for a condition or make-up examination regularly scheduled is \$3.

The fee for a make-up quiz regularly scheduled is \$1.50.

CHARGES FOR DAMAGES

Students who damage apparatus in the laboratories or who willfully destroy school property will be responsible for the replacement of such damaged articles or for the cost of replacing where this is undertaken by the School.

ADMINISTRATIVE REGULATIONS

EXAMINATIONS AND QUIZZES

Examinations are held throughout the term at the discretion of the instructors. Final examinations are required upon the completion of all courses. The following system of grading is used:

- A — 90 to 100 — Excellent
- B — 80 to 89 — Good
- C — 70 to 79 — Fair
- D — 60 to 69 — Lowest Passing Grade
- E — 50 to 59 — Conditioned
- F — Below 50 — Failure

A student marked E (conditioned) may enroll in the advanced course in the same subject immediately following, but upon condition that he remove his deficiency by special examination early in the next term. A fee of \$3 is required for each such examination regularly scheduled.

A student receiving the grade of B is exempt from examination when applying for admission to the colleges composing the New England College Admissions Board. A list of these colleges is given on page 25. It is to be noted, however, that colleges retain the right to accept or reject applicants for admission.

TRANSFERS

Students are not permitted to change from one course to another without first consulting the Headmaster or other officer of the School and receiving a Transfer Order.

REPORTS OF STANDING

An informal report of the student's standing is issued at mid-term; and the formal report, covering the full record of the term, is issued at the close of each year.

In the case of students who are under twenty-one years of age, reports may be sent to parents in the event of unsatisfactory work on the part of the student, non-compliance with administrative regulations, continued absence, and withdrawal. Parents of minors may obtain reports at any time on request.

ATTENDANCE REQUIREMENTS

A careful record of attendance upon class exercises is kept for each student. Absence from regularly scheduled classes on any subject will seriously affect the standing of the student. It may cause the removal of certain subjects from his schedule and the listing of these as "conditioned subjects." However, if reasonable excuse for absence be presented, the student may be allowed to make up the time lost, and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course shall designate.

A minimum attendance record of 75 per cent must be maintained in all classes before a student will be admitted to examination.

INFORMATION REGARDING PROGRAMS

THE UNIT SYSTEM EXPLAINED

Frequent reference is made in this catalog to "units," and that there may be no misunderstanding in the minds of students, this explanation is offered. A unit of high school credit is given upon the satisfactory completion of the work of one school year in a single standard subject, the equivalent of which is covered by this School in thirty-two weeks or in the intensive courses of twenty and fifteen weeks offered in the winter and summer terms respectively. The following exception is to be noted: Four full courses in English total three units towards graduation or towards college entrance.

TERMS AND HOURS OF ATTENDANCE

When arranging a program for a student the school officers usually assign work which requires attendance for *only two evenings a week*.

All classes are scheduled to meet between the hours of 7 p.m. and 10 p.m.

Each term a schedule is prepared listing the courses to be offered and the hours at which they meet. A copy may be obtained on request.

Following is the general arrangement for the completion of a course in each term of the school year.

Fall Term (32 Weeks)

One full-unit course requires attendance for one hour twice a week. Students may carry one, two, or three courses during this term.

Winter Term (20 Weeks)

One full-unit course requires attendance for one and a half hours twice a week. Students may carry one or two full-unit courses during this term.

Summer Term (15 Weeks)

One full-unit course requires attendance for one and a half hours twice a week. Students may carry one or two full-unit courses during this term.

COURSES OF STUDY

Algebra 1	German 1
Algebra 2	German 2
*Biology	Government
*Chemistry	History (Ancient)
Economics	History (European)
English 1	History (English)
English 2	History (United States)
English 3	Latin 1
English 4	Latin 2
French 1	Latin 3
French 2	Latin 4
French 3	*Physics
Geometry (Plane)	Spanish
Geometry (Solid)	Trigonometry

HOW TO PLAN YOUR PROGRAM OF CLASSES

In choosing subjects each term, students should bear in mind:

- (a) The requirements for graduation from the Lincoln Preparatory School. These are given on page 26.
- (b) The admission requirements of the higher institution they wish to enter. Catalogs of most colleges are on file at the school office. In case of doubt, consult these and talk with the Headmaster.
- (c) The special requirements for various professions and vocations.
- (d) Their special interests, in the event that courses are chosen from the cultural point of view.

It is especially important to meet the requirements for graduation so that a diploma may be obtained. Most colleges and hospitals and many lines of business and industry not only require fifteen units of high school work, but also insist that the student be a graduate of a recognized high school. Moreover, in business and in everyday life it means infinitely more to say one is a high school graduate than merely to say one has completed fifteen units of high school work.

*These courses meet only once a week in the fall term and twice a week in the winter and summer terms. All other courses meet twice a week, usually on Tuesdays and Fridays.

HOW LONG WILL IT TAKE TO OBTAIN A DIPLOMA?

The flexible schedule and the twelve months' operation of the Lincoln Preparatory School enable a student to save considerable time. The exact time that it will take to obtain a diploma is dependent upon credit from former institutions attended, hours available for study, and the number of courses pursued. A student who enters school without any credit for former high school attendance can complete his course in from three to five years, according to the number of summer terms he attends. However, it is urged upon students that *a high school education is a matter of accomplishment and not a matter of time*, and the School insists on a high standard of accomplishment.

ADMISSION TO COLLEGE

Since the Lincoln Preparatory School offers regular college preparatory courses for those who wish to enter college, a student, according to his record and his plan of procedure, may enter college in one of the following ways:

By Diploma. Certain colleges will admit students on the diploma from this School. Among these colleges are all those that accept a standard high school diploma.

By Examination. A few colleges, notably Harvard, Yale, and the Massachusetts Institute of Technology, require certain examinations from all candidates. This School prepares students for all college entrance examinations and for the examinations of the College Entrance Examination Board.

By Certificate. The School is accredited by the New England College Admissions Board. Some of the colleges which accept the certificate of this School are Amherst, Bates, Bowdoin, Colby, Massachusetts State College, Clark, Middlebury, Tufts, Wesleyan, Williams, and Worcester Polytechnic Institute. Generally speaking, *institutions that accept students by the certificate method will accept the certificate of this School. The certificate grade is 80 per cent.*

ADMISSION TO HOSPITAL TRAINING SCHOOLS

Since the School is fully accredited, most hospitals will admit students who hold the diploma of the School even though all

grades are not of certificate rank. A few hospitals, however, require certificate grades of candidates for training. Certificate grades from this School are acceptable. Each student should ascertain, however, the definite entrance requirements of the hospital she plans to enter.

REQUIREMENTS FOR GRADUATION

The diploma of the Lincoln Preparatory School is granted without charge to the student on the completion of a total of fifteen units of work, *of which at least four must have been earned in the Lincoln Preparatory School*. In addition, each student must have completed in this School or elsewhere the required subjects for the diploma for which he is a candidate.

CURRICULA

College Course Diploma

A. For admission to Liberal Arts Colleges

This course prepares for most colleges that offer the degree of Bachelor of Arts.

<i>Required:</i>	Units
College Preparatory English	3
Algebra	2
Plane Geometry	1
French or German or Spanish	2
Physics or Chemistry or Biology	1
United States History	1
Latin or Greek	2
	<hr/> 12

Elective:

The remaining three units may be selected from the following:

	Units
Spanish	2 to 3
Latin	1 to 2
French	1 to 2
European History	1
Ancient History	1
Solid Geometry	$\frac{1}{2}$
Trigonometry	$\frac{1}{2}$
Chemistry or Physics or Biology	1

One unit of a foreign language is not acceptable for credit.

Language and Mathematics requirements vary somewhat for entrance to the different colleges. This is especially true of the Latin requirements. Some colleges require three entrance units in either French or German. *It is the student's responsibility to meet the requirements of the college he elects to enter.*

In addition, other electives may be permitted by special consent provided they are acceptable by the college to which the student seeks entrance.

B. For admission to Engineering Schools and Colleges of Liberal Arts offering the degree of Bachelor of Science

<i>Required:</i>	Units
English	3
French or German or Spanish	3
Algebra	2
Plane Geometry	1
Physics or Chemistry	1
United States History	1
Trigonometry and Solid Geometry	1
	<u>12</u>

Two units of two modern languages will be accepted for three units of one language.

Language and Mathematics requirements vary somewhat for entrance to the different colleges. *It is the student's responsibility to meet the requirements of the college he elects to enter.*

Elective:

Subjects may be selected from either the Required or Elective List of the College Course to make up the necessary fifteen units.

One unit of a foreign language is not acceptable for credit.

General Course Diploma

The General Course offers a general education and also, *if the right selection of subjects is made*, enables students to enter certain colleges. A wide selection of subjects is available but choice of as many college preparatory subjects as possible should be made.

Required: Five Units

	Units
English	3
United States History	1
Physics or Chemistry or Biology	1
	<u>5</u>

Limited Electives: Three Units (choose one option)

Mathematics Option

Algebra 1, Algebra 2 or Physics, and Plane Geometry 3

Language Option

Three units of any one of the following or two units of any two:

French, Latin, German, and Spanish 3 or 4

Social Science Option

Economics, Government, English History, Ancient History, European History, etc. 3

Free Electives: Seven Units

Any standard high school subjects to complete total of 15 units.

One unit of a foreign language is not acceptable for credit.

SPECIAL PROGRAM FOR ADMISSION TO TRAINING SCHOOLS FOR NURSES

The work conducted by the Lincoln Preparatory School is accredited by the Massachusetts hospitals and by the State Board of Registration in Medicine. The State Board of Registration in Medicine and the Board of Registration of Nurses have ruled that a high school education or its equivalent is a prerequisite for admission to hospital training schools. The high school certificate must show the completion of fifteen units accepted by the high school in meeting graduation requirements. These fifteen units are to be as follows:

<i>Required (7 units)</i>		Units
1. English (4 years)		3
2. History		1
3. Mathematics		1
4. Science		2
 <i>Free Electives (8 units)*</i>		
1. Greek or Latin	5. Social Studies	
2. Foreign modern language	6. Commercial Studies	
3. Mathematics	7. Fine and Practical Arts	
4. Science	8. Miscellaneous	

*Not more than 4 units will be accepted in one group.

An officer of the School will be glad to arrange a program so that these electives will be judiciously chosen, not only to aid the student in the subsequent subjects, but to meet the requirements of other States with which a reciprocal arrangement exists with the State of Massachusetts.

For those already engaged in the profession of nursing, attention is directed to facilities which are available to those who have not completed a high school education in accordance with the above demands. New regulations have been formed regarding institutional promotion and regarding teaching and administrative positions in hospitals, and while such legislation is not retroactive, it will certainly prove helpful to those who already occupy such positions to be adequately equipped for advancement and promotion in the event of transfer.

Because of the war emergency and the great need for nurses, some hospitals have modified their entrance requirements. Students should inquire at their hospitals for a definite statement regarding entrance requirements.

GENERAL INFORMATION

LIBRARIES

In the East Building a large and well-equipped library is available for the use of students. The reading rooms are open from 9 a.m. to 10 p.m. on week days, and from 9 a.m. to 1 p.m. on Saturdays. Students have also the privilege of securing books from the Boston Public Library and its branches. To obtain this privilege application should be made at the school office where the necessary blanks will be furnished.

TEXTBOOKS AND SUPPLIES

The Bookstore, which is situated in Richards Hall, is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the School may be purchased at the Bookstore.

RAILROAD TICKETS

Vouchers for half-fare tickets on the Boston Elevated Railroad are issued by the school office on the first, sixth, and eleventh Fridays of each term. The railroad systems entering Boston issue students' tickets to students under twenty-one years of age. Applications for these may be obtained at a railroad office and presented at the school office for signature.

VISITORS

Visitors are always welcome at one class session in any department. Those who wish to visit any of the classes should call at the school office and obtain a visitor's card signed by the Headmaster.

EDUCATIONAL GUIDANCE

Prospective students or those desiring advice or guidance with regard to any part of the school work or curricula, or who wish assistance in the solution of their educational problems, should note the fact that interviews are available without obligation, and that the officers of the School will do their utmost to see that a program is designed which is the most satisfactory for the individual student. In certain cases, other institutions may be recommended which suit the student's needs better. Furthermore, it is important that those with educational problems to solve should realize the necessity for care in approaching educational work so that the program selected will be on the best educational basis.

OUTLINES OF COURSES

The Lincoln Preparatory School reserves the right to change the arrangement of courses, the requirements for graduation, tuition fees, and other regulations affecting the students. Such regulations will affect both old and new students.

Note: The courses of the School are arranged in "units."

A unit is ordinarily the amount of work covered in a single subject taken four or five times a week for a year in a standard day high school.

In this School a unit may be covered in each subject in thirty-two weeks. See page 23 for explanation of unit system.

Students carry one, two or sometimes three subjects at a time. Fifteen units, properly selected (see pages 26 and 27), are required for graduation.

The high school courses described below are the equivalent of similar courses offered in a standard day high school.

ENGLISH

The fundamental purposes of the department are to give the student efficient training in grammar in order to afford a sound basis for correct speech and writing; to instill correct principles of constructing sentences and paragraphs; to help him enlarge his vocabulary and to acquire an interest in words; to train him in the elements of logic as related to the organization and expression of thought; to teach him how to study; to impart an elementary knowledge of the types and the history of English literature; and to aid him in forming a taste for good literature and a genuine appreciation thereof.

English 1. This course is designed to bridge the gap between grade and high school English. Fundamentals of English grammar, the correct sentence, the more important rules of spelling and punctuation, simple compositions — especially the letter — and an introduction to literary selections as models for voluntary reading are presented.

English 2. This course marks the beginning of a more intensive study of English, both as a tool and as literature. Functional grammar, development of the paragraph, careful planning of themes, and a beginning of the critical study of literary forms, both poetry and prose, form the basis of the course.

English 3. This is an advanced course in composition including précis-writing and the structure of paragraphs and sentences. There is a rapid review of grammar and punctuation. The essay, the drama, the novel, and types of poetry are studied.

English 4. This course completes the two-year sequence begun in English 3. It prepares students for college entrance and College Board examinations and also stresses the needs of the student who does not intend to pursue formal study in a higher institution. By means of thought-provoking reading material, both classic and modern, it stimulates written expression on subjects of interest to the individual student. Compositions are submitted at regular intervals throughout the term. The essay, the drama, the lyric poem, and prose fiction are studied, and the principles underlying these forms of art are presented.

LATIN

Exercises in translation at sight begin with the first lessons in which Latin sentences of any length occur, and continue throughout the course to insure correct methods of work on the part of the student. In the translations of passages from the Latin, the use of clear and natural English is insisted upon. Reading aloud is encouraged. The work in Latin Composition aims to give the student a thorough knowledge of the fundamental principles of Latin syntax. It has been found advantageous to use a double system of notebooks, calling for special written work from the student. This work deals with Latin forms, principles of Latin syntax, writing of English-Latin sentences, and finished translations of selected passages from the Latin. These courses in Latin fulfill the requirements of college entrance examinations.

Latin 1. Exercises in translations, English-Latin, Latin-English. Drill in Latin forms, drill in Latin syntax. The course aims to give the student a thorough knowledge of the fundamental principles of Latin syntax.

Latin 2. The Latin reading is not less in amount than Caesar, Gallic War. I-IV. This amount of reading is taken from Caesar (Gallic War and Civil War). Nepos (Lives), Aulus Gellius, Eutropius, Phaedrus, Quintus Curtius Rufus, and Valerius Maximus, or books of selections containing some of these with other authors of prose works. Special attention is given to sight translation, to vocabulary study, to the Latin Word List, which contains those words the student is expected to know at the end of two years of the study of Latin. There is continued drill in Latin syntax and in Latin forms. This course in second year Latin aims to meet the needs of those students who plan to enter colleges that require only two years of Latin.

Latin 3. The Latin reading is not less in amount than Cicero, the oration against Catiline, for the Manilian Law, and for Archias. This amount of reading is selected from Cicero (orations, letters, and De Senectute), Sallust (Catiline and Jugurthine War). The reading for the year includes selections from such authors as Pliny, Livy, or books of selections containing these and other authors of prose works. Special attention is given to the study of passages of Latin prose set for comprehension. The course aims to cultivate in the student the ability to render unseen passages of Latin prose into clear and natural English, as well as the ability to write simple Latin prose. Due attention is given, therefore, to vocabulary study, to the Latin Word List, which contains those words the student is expected to know at the end of three years of the study of Latin. The political and social life in Rome in the time of Cicero is studied.

Latin 4. The reading is not less in amount than Virgil, Aeneid I-IV. This amount of reading is taken from Virgil (Bucolics, Georgics, Aeneid), Ovid (Metamorphoses, Fasti, and Tristia), or from books of selections containing poems or extracts from other poets. Special attention is given to the study of passages of Latin verse set for comprehension. The course aims to cultivate in the student the ability to render unseen passages of Latin verse into clear and natural English, as well as the ability to write simple Latin prose. Due attention is given, therefore, to Latin forms, Latin syntax, to vocabulary study, to the Latin Word List, which contains those words the student is expected to know at the end of four years of the study of Latin. Literary and historical allusions, prosody, and questions on subject matter are studied.

FRENCH

The courses in French are planned with the purpose of giving the students (1) an appreciative comprehension of French, both as literature and as a spoken language; and (2) a sufficient knowledge to fit them for advanced work. The essentials of the grammar are mastered by continued drill and constant application. The attainment of good pronunciation receives careful attention, and from the beginning the student is trained to understand spoken French.

French 1. This course begins with instruction in pronunciation. Phonetic symbols are not used. The acquisition of a basic vocabulary is stressed and the memorizing of word groups and short sentences.

The instruction in grammar consists of the elementary forms and uses of articles, nouns, adjectives, pronouns, adverbs, regular verbs, and a few common irregular verbs. Much emphasis is placed upon written translation of English into French.

The reading text provides for the translation of at least fifty pages of simple French. This is largely oral translation.

The textbooks are Roux' "Premier Cours de Francais" and Ford and Hick's "An Alternative French Reader."

French 2. This course completes the elements of grammar and syntax, with special emphasis upon forms and practice in their use in written composition. Frequent review lessons help to make the student familiar with the essentials.

The textbooks are Parker's "French Practice Book" and Bazin's "Les Oberle" which provides a background of modern French life.

French 3. Bovee and Carnahan's "New French Review Grammar" is used and provides a general review and further advance in grammar and in written translation or connected prose. All the common irregular verbs and many idioms should be learned.

Bordeaux' "La Peur de vivre" provides for the reading of modern standard French.

GERMAN

At the end of the elementary course in German, the student should be able to read at sight and to translate a passage of easy German prose. He should be able to put into German, short English sentences taken from the language of everyday life, and to answer questions upon principles of German grammar. The course aims to meet the needs not only of those students who are seeking a general knowledge of German, but also of those students who are planning to take the college entrance examinations.

German 1. Chiles-Wiehr "First German Book" is used as a grammar and composition book. This is supplemented by reading Gueber *Märchen und Erzählungen* I, II, Immensee by Storm. Drill in pronunciation; practice in reading the German text aloud; memorizing of simple verse and prose selections.

German 2. "Chiles German Composition and Conversation" is used as a textbook. This is supplemented by reading "Emil und die Detektive" by Kästner, followed by translating such works as "Germelshausen" by Gerstäcker, "Die Braune Erica," by Jensen. Exercises in comprehension; memorizing of simple German verse and prose selections. "German Frequency Word Book" by Morgan, "German Idiom Word List" by Hauch are used.

SPANISH

Spanish 1. The work of the first year is so planned that it serves as a complete unit in fundamentals for the student who wishes to continue the language independently by travel or reading. Correct pronunciation, a knowledge of the grammatical structure of the language, and an ability to read and write within the limits of a practical vocabulary are the goals of the course. Standard elementary readers are used in connection with a grammar text such as Hills and Ford, "First Spanish Course."

Spanish 2. After a rapid review of the work covered by Spanish 1, the second year is devoted to the enlargement of vocabulary, including common idioms, the increase of skill and speed in translation, with special emphasis upon sight translation and free composition. The course prepares for the elementary examination in Spanish given by the College Entrance Examination Board. The use of a standard composition book is supplemented by much reading of current as well as classical Spanish.

HISTORY, GOVERNMENT, ECONOMICS

The aim of the department is to give a broad knowledge of vital conditions in the growth of the leading countries of the world. This includes the study, not only of important historical facts, but more especially of the progress of development in government, society, business, religion, and education. The past is studied that the present may be better understood.

History (English). This course is a study of English History from the time of the Roman Conquest to the present. Special emphasis is given to the study of the structure of government and the legal system because of their bearing upon American development. Study of English foreign policy is essential to a better understanding of international problems of the present. Study of church problems, the Industrial Revolution, democratic growth are stressed because of present-day tolerant attitude in regard to religion, views as to wisdom of dictatorial or democratic government, and ever changing economic conditions.

History (United States). A careful and comprehensive study is made of United States History, including not only the story of earlier times, but also an analysis of events from the Civil War down to and including our own times. Special reference is made to the social and industrial development of the country, economic progress, sources and effects of immigration, and of American government. The course is designed to cover the requirements of the College Entrance Examination Board.

History (European). In this course a study is made of the European powers from the beginning of the seventeenth century to the present. Autocracy rampant in the seventeenth and eighteenth centuries begins to decline in the latter eighteenth century with the French Revolution. The decline continued in the nineteenth century, giving way to democracy, which reached its peak following the World War, only to yield in many countries to dictatorships of the present day. International relations are traced, noting especially the influence of commerce and the subsequent imperial rivalries and wars. The Industrial Revolution, with its profound effect upon humanity, forms another important part of the course. Considerable stress is given to great leaders of the different European powers.

History (Ancient). This course devotes one term to the study of the Ancient Orient and Greece as far as the death of Alexander and the break-up of his empire, with the expansion of Greek culture in the Mediterranean world. The second term is devoted to the study of the history of Rome to the year 476 A.D. The course emphasizes the characteristic elements of these civilizations. The work calls for the study of an accurate historical textbook, in which not less than five hundred pages of text are devoted to the particular subject. Special attention is given to map study. The work is supplemented by a topical study of outstanding phases of the history of the period, including growth of institutions, historic characters, outstanding events and periods. The work calls for consultation of standard writers on Ancient History, especially books of Readings in Ancient History. The aim of the course is to meet the needs of those students who are seeking a general knowledge of the subject as given in a high school, to prepare students for the examinations that are given by the College Entrance Examination Board as defined in the Definition of Requirements, published by the Board.

Government. The forms of our local and state governments are taken up first. These are followed by a careful analysis of the Constitution of the United States, showing the relationship of the executive, legislative, and judicial branches of our National Government.

During the second semester a study is made of South America and the principal nations of Europe, and in addition the smaller nations where innovations may make investigation of governmental methods worth while.

Economics. The origin and development of our industrial system, and an analysis into its component parts, together with the economic phenomena accompanying them. It is intended to make economics of practical value in everyday life.

During the second semester the course embraces the reform and improvement of our industrial system; taxation, the tariff, international trade, transportation, labor and capital, public ownership, wages and profits, and other current economic problems are treated.

MATHEMATICS

The courses in mathematics are planned to meet the needs of all secondary students. They afford an opportunity for preparation in the mathematical processes which are necessary for success in industrial, commercial, or professional careers. They are intended (1) to acquaint the student with such mathematical processes and methods as he is most likely to need in the successful pursuit of other studies and in the various trades and occupations; (2) to prepare the student for the successful pursuit of the more advanced branches of mathematics in technical schools and colleges.

Algebra 1. This course introduces the student to: (1) the positive and the negative number; to its application in the four fundamental operations leading up to the solving of formulas and equations, both linear and fractional in one and two unknowns; (2) the function of the graph for both pictorial representation and the solving of equations; (3) the literal number and the study of problems.

Algebra 2. Review of Elementary Algebra with more difficult problems. Quadratics and simultaneous quadratic equations, with applications, ratio, proportion, and variation, progressions, binomial theorem, logarithms, and that part of Trigonometry required by the College Entrance Examination Board.

Geometry, Plane. The five books of Plane Geometry are studied. The numerous original exercises stimulate the power to reason clearly and to derive logical proofs. Special attention is given to those who expect to take college entrance examinations. This course meets College Entrance Board requirements.

Geometry, Solid. This course deals with appreciation of three dimensional relations, formal proofs of the standard theorems and originals, locus problems, properties and measurement of prisms, pyramids, cylinders, cones and the sphere.

Trigonometry. The major topics covered by this course are the theory and use of logarithms, solution of right and oblique triangles, trigonometric equations, proofs of fundamental formulas and identities based upon them, radian measure.

DRAWING

Mechanical Drawing. The fundamentals of Mechanical Drawing are stressed in this course. A credit towards college entrance will be granted upon the completion of sixty-five problems or the equivalent. All work is individual and admits of progress according to the student's ability.

Instruction is given in the testing, use and care of the instruments and drawing supplies, and about thirty drawing plates are made. The topics studied in these plates include: technique practice, lettering, geometric constructions, orthographic projection, auxiliary views, revolution of objects, isometric, cavalier, cabinet and perspective projection, intersections, sections, helix and application, screw threads, dimensioning and inking.

SCIENCE

Biology. This is a comprehensive course in Biology designed to meet the requirements of the following persons: (1) prospective college students who are preparing for college entrance and College Board Examinations; (2) students who plan to enter institutions requiring credits in some science; (3) prospective nursing students; (4) those who desire an elementary knowledge of the structure and function of plant and animal life.

The multiple objectives of the course are: to gain the best approach to an understanding of facts, principles, and theories and to apply them in various ways; to help the student to develop a special interest in some part of the course; to give a fundamental understanding of living things, of their structure and function; to give a survey of the plant and animal kingdoms with the primary objective of creating interest in and appreciation of nature; to present the economic aspects of Biology; to present an adequate understanding of hygienic principles underlying all healthful living organisms; to meet the requirements of an elementary course in any life science which aims to contribute to both avocational and vocational training.

The course consists of lectures, demonstrations, discussions, and laboratory work.

Physics. This course is intended for two groups of students. First, it will meet the requirements of those expecting to enter a college or technical school. Secondly, it is intended to help those who wish a general knowledge of the important laws and principles of Physics as applied to modern everyday experiences.

The applications of Physics in such fields as household appliances, the weather, the automobile, the airplane, radio, etc., are particularly stressed with the idea of giving a background of culture and enjoyment.

Many students interested in mechanical lines will find it giving them a clearer understanding of the operations of devices of which they make constant use.

Laboratory experiments and lecture table demonstrations will illustrate the subject matter studied in the text.

Although the course is not intended to be highly theoretical, an elementary knowledge of Algebra and Geometry will be of assistance in the solution of problems.

Chemistry. This course has the twofold aim of preparing the student in Chemistry for entrance to any college or technical school and providing a general introduction to the subject for other purposes.

There are class discussions of chemical principles and of chemical materials, solution of numerical problems, practice in such exercises as writing of equations, demonstration experiments carried through by the instructor. The student does assigned experiments in the laboratory and writes reports of his work.

The more important elements, both non-metallic and metallic, as well as numerous compounds, are studied. Important laws and hypotheses of Chemistry are constantly stressed.

Unless there is urgent reason for following a different order, the student is advised to arrange his succession of courses in such a way that Chemistry will be preceded by a study of Physics.

THE LINCOLN SCHOOLS

Evening Sessions

CLASSES OPEN TO MEN AND WOMEN

LINCOLN TECHNICAL INSTITUTE

Associate in Engineering Programs

Courses leading to the Degree of Associate in Engineering are offered in the following major fields:

AERONAUTICAL

CHEMISTRY

CIVIL

ELECTRICAL

MECHANICAL

STRUCTURAL

B.B.A. Degree Program

A six-year program conducted in conjunction with Northeastern University School of Business is available which leads to the degree of B.B.A. in Engineering and Management awarded by Northeastern University.

Special Programs

For those who do not wish to take one of the regular programs, special programs consisting of one or more courses can be arranged to meet individual needs.

LINCOLN PREPARATORY SCHOOL

Fully accredited by the New England College Admissions Board. General, Classical, and Technical high school courses are available.

Students may enter in September, January, and June.

For further information write, indicating the School in which you are interested

THE LINCOLN SCHOOLS

360 Huntington Avenue, Boston, Mass.

Telephone, Kenmore 3177

Huntington School



Telephone, Kenmore 3177

THE
HUNTINGTON
SCHOOL
for BOYS

An Urban Independent Day School

*With the Advantages and Physical Facilities of a
Country Day School*

320 HUNTINGTON AVENUE
BOSTON, MASS.

Telephone, Kenmore 3177

FOREWORD

The Huntington School for Boys has as its primary purpose the adequate preparation of its students not only for entrance to, but especially for success in the best colleges and universities. In this accomplishment the School has enjoyed a most creditable success.

The Huntington School has developed over a long period of years into a well organized and unified school, in which the outstanding factors are the excellence of the faculty, the results accomplished in preparing boys for college, the quality of the student body, and the splendid physical equipment.

This catalog sets forth in some detail what Huntington offers to boys as a result of many years of experience in the college preparatory field.

Within its pages we hope that those who are interested in knowing more about Huntington will find the information which will be helpful in solving any educational and vocational problems especially related to the adequate preparation of a boy for college.

The headmaster of the School will be very glad to furnish additional information upon request.

Telephone, Kenmore 3177

HUNTINGTON SCHOOL FOR BOYS

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OFFICERS OF THE SCHOOL

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EVERETT AVERY CHURCHILL, A.B., Ed.D., *Vice-President*

GALEN DAVID LIGHT, A.B., *Treasurer*

CHARLES HENRY SAMPSON, B.S., Ed.M., *Headmaster*

FACULTY

CHARLES HENRY SAMPSON, B.S., Ed.M.
(University of Maine) (Harvard University)
Headmaster

WILLIAM SAWYER SPENCER, A.M.
(Harvard University)
Head of English Department, Emeritus
President, Huntington Chapter, Cum Laude Society

ROBERT OREN BATES, B.S.
(St. Lawrence University)
Mathematics

CARL FERDINAND CHRISTIANSON, A.B.
(Wesleyan University)
History

NORMAN GREENE, B.S.
(Boston University)
Business Subjects, Mathematics

PRESTON HARVEY, A.B., Ed.M.
(Bowdoin College) (Boston University)
Latin, Mathematics
Faculty Adviser of The Huntington Record

PERCY EDWARD JONES, B.S.
(Boston University) (Sloyd Training School)
Mathematics, Mechanical Drawing

ROLAND LEO LEACH, A.B., Ed.M.
(Tufts College) (Harvard University)
French and German
Director of Dramatic and French Clubs

ARTHUR EUGENE NEWCOMB, JR., A.B., Ed.M.
(Middlebury College) (Boston University)
English
Director of Literary Club

FACULTY (Continued)

ALFRED LORING SKINNER, A.B.
(Harvard University)
Mathematics

JOHN MOORE TROUT, JR., A.B., Ed.M.
(Princeton University) (Harvard University)
English, French and German
Director of Chess Club

HAROLD CLAYTON WILCOX, S.B., S.M.
(Rhode Island State College) (Brown University)
Physics and Chemistry
Director of Science Club

WILLIAM GREENE WILKINSON, A.B., Ed.M.
(Boston University)
(University of Kentucky) (McGill University) (École Montcel)
French and Spanish

COACHING STAFF

Director of Athletics	WILLIAM GREENE WILKINSON
Track	ROBERT OREN BATES
Swimming	RAYMOND ENGLISH MILLARD
Basketball	
Baseball	
Football	THOMAS ALFRED BLAKE
Tennis	JOHN MOORE TROUT, JR.
Intermediate School Athletics	PERCY EDWARD JONES

EMILY RAMSAY, *Executive Secretary*
DOROTHY TRINDALL, *Secretary to the Headmaster*
MABEL LITCHFIELD, *Recorder*
MYRA WHITE, *Librarian*
JOHAN GUSTAVE LARSSON, M.D., *School Physician*

CALENDAR

1943-1944

School Year Begins	SEPTEMBER 22
Christmas Vacation	DECEMBER 17-JANUARY 3
First Semester Examinations	JANUARY 19-28
Second Semester Begins	JANUARY 31
Spring Vacation	March 20-25
Final Examinations	MAY 22-MAY 31
Commencement	JUNE 2
Summer Session (1943)	JULY 6-AUGUST 27
Summer Session (1944)	JULY 5-AUGUST 31

HOLIDAYS

Columbus Day, Thanksgiving Day
Washington's Birthday, Patriots' Day, Memorial Day.

GENERAL INFORMATION

INTRODUCTION

THE HUNTINGTON SCHOOL was established in September, 1909.

From the outset, emphasis has been placed upon the development of those qualities and habits which boys must necessarily possess if they are to succeed in meeting college entrance requirements and to succeed in college after gaining admission.

With the passing of the years fathers and mothers have made it very apparent that in Greater Boston there is need for a first-class independent day school such as Huntington which presents a strong college entrance program in an environment where character qualities are emphasized, and which, at the same time, allows its boys to remain under the direct influence of the home.

Huntington boys come from all points in Boston and the surrounding cities and towns, and at times we have students who commute from as far as Worcester, Providence, and New Hampshire towns and cities.

Huntington is the only urban independent day school for boys in Boston which presents a complete development program.

Huntington students have every opportunity to attain a sound and well-developed body, strong character, and independence of thought, through daily association with well-rounded Christian men in their studies, sports, and general school life.

Graduates of Huntington are found in practically all of the New England colleges and in many colleges and universities located outside of this area.

The School limits its enrollment to a maximum of two hundred boys each year. There is no desire to increase this number. It is sufficiently large for the promotion of school activities which are of interest and value to growing boys. The School is not so large as to make it difficult for the Headmaster and his associates to keep in touch with each individual.

The School enrolls boys in all forms corresponding to the four years of high school.

Many high school graduates who need an additional year of college entrance preparation enroll in the School.

Although Huntington is a Day School, a few boarding students are accepted. The School accepts no responsibility for such

students in respect to activities outside of school hours. The School will co-operate to the fullest extent, however, in arranging for satisfactory living quarters for those who come from a distance.

SHOULD I GO TO COLLEGE?

THE ANSWER to that question is definitely "yes" if a boy is willing to accept a sensible long-range view. After the war is over young men who have even a portion of a college training have a start on those who do not. Such are certain to be in a preferred situation. Don't discard plans previously made to get advanced educational training. Earn the required units for college entrance as soon as possible.

The government itself, in spite of the need for the services of young men, advises remaining in school until called. No individual need feel that he is shirking his responsibilities as a patriot if instead of enlisting in the armed services *now* he prepares himself through education to serve his country better at some later period. As a matter of fact, a young man's chances of a satisfactory classification depend much on the quality and completeness of his secondary school record.

THE COMPLETE DEVELOPMENT PROGRAM AT HUNTINGTON

THE SCHOOL believes in the complete development of the individual and many opportunities are given a boy to discover and develop latent qualities.

For this reason, in addition to the regular program of studies, there has been developed an extra-curricular program offering opportunities for supervised play, musical and other club activities. Competent leadership and excellent facilities are available for both the educational and extra-curricular programs.

Scholarship must, in a college preparatory school such as Huntington, occupy first place in its productive efforts but we believe that the boy who goes on to college with an appreciation of values as they should exist in a normal, active and happy life, is in a better position to succeed than one who does not have this appreciation.

LOCATION

THE SCHOOL occupies quarters in the Boston Y. M. C. A. building at 320 Huntington Avenue in the educational and cultural center of Boston. It is within easy reach of all points in Greater Boston.

Because of the new Huntington Avenue subway the running time from Park Street is only nine minutes. The School is within easy walking distance of the Huntington Avenue, Trinity Place and Back Bay railroad stations, and also of the Massachusetts Station in the Boylston Street subway. Parking space is available to those who come to the School by automobile.

BUILDINGS

THE SCHOOL is housed in a building especially equipped for educational work and for successfully carrying on the complete program which it sponsors.

RECITATION BUILDING The recitation rooms, the physics and chemistry laboratories, and the drawing rooms are on the second, third, and fourth floors.

NATATORIUM The swimming pool, seventy-five feet long by twenty-five feet wide, is supplied with filtered water heated to a proper temperature by an elaborate system of pipes. It is one of the finest in New England. The School has special hours reserved for the use of the pool.

GYMNASIUM In the rear of the main building, and closely connected with it, is the Samuel Johnson Memorial Gymnasium, the largest indoor gymnasium in Boston. On the main floor is the gymnasium proper, equipped with the best of apparatus. The running track which encircles it fifteen feet above the floor level is twelve laps to the mile. A visitors' gallery on the same level seats 500. A special locker room, shower baths and special exercising rooms are on the floor beneath the gymnasium proper. The Huntington School has the use of the entire gymnasium area and equipment at definite scheduled periods.

EQUIPMENT

CLASSROOMS The classrooms are of standard size and are completely equipped with modern school furniture.

LABORATORIES The School has well equipped laboratories for conducting its physics and chemistry courses.

LIBRARY The School has excellent library facilities.

DRAWING ROOM There is a well lighted and properly equipped mechanical drawing room.

PLAYGROUNDS

THE HUNTINGTON SCHOOL has an athletic field of approximately five acres in the Longwood section of Brookline on Kent Street, one and one-half miles from the school building. Transportation is furnished free of charge to and from the field. Here are ample and excellent facilities for all out-of-door sports. A completely equipped field house furnishes adequate facilities for both home and visiting teams. Altogether the School has one of the best athletic fields in Greater Boston. In addition to these grounds there are available at the school building tennis courts and other facilities for games and sports.

MORNING ASSEMBLY

THREE TIMES each week all students assemble in Bates Hall for the purpose of taking part in a brief devotional program. At this time matters of general interest in the school life are presented to the students.

The School is non-sectarian but thoroughly Christian in the conduct of all its religious activities. Occasionally at this time educational talks of value are presented, and special programs are given by the boys, such as rallies, concerts, short plays, and speaking programs in observance of the holidays.

LUNCH ROOM

A LARGE LUNCH ROOM is provided in the building where a satisfactory lunch may be had at a moderate cost.

STUDENT BODY

THE HUNTINGTON SCHOOL's student body is divided into two principal groups—Intermediate and Senior. Boys in the intermediate group are those taking ninth and tenth grade work. The senior group is composed of boys who have one or two years of work to complete before entering college.

SPECIAL STUDENTS

HUNTINGTON accepts each year a limited number of special students. Those taking one, two, or three subjects are so classified. Special students work for credit but not for the school diploma.

DECISION ON TYPE OF COLLEGE COURSE IMPORTANT

It is obvious that because of present conditions advice in respect to the selection of a college has to be given on a basis radically different than in normal times. The headmaster keeps in touch with changes as they occur and is ready at all times to advise parents and their sons as best he can.

The School, as usual, makes a serious attempt to prepare a boy for the particular type of college in which he is most likely to succeed.

ADMISSION REQUIREMENTS

PARENTS OR GUARDIANS who wish to enter their boys in the School should fill in the Application Blank, which may be found at the back of the catalog, and return it to the Headmaster.

The School requires testimonials of good moral character from all students.

It is expected that no boy will apply for admission whose conduct in other schools has brought him discredit.

Early registration results in advantage to the student as special attention to his particular needs is made possible. A personal interview with the Headmaster of the School is required.

A registration fee of five dollars must accompany the application. This fee is in addition to the regular tuition charge and when once paid it will not be refunded.

Boys are accepted for admission to all grades from the ninth through the twelfth.

ENTRANCE EXAMINATIONS

THE SCHOOL reserves the right to give entrance examinations if such a procedure seems advisable. These examinations may be oral or written; they may be in the form of aptitude or achievement tests.

The policy of the School is a liberal one as far as entrance requirements are concerned. Most Huntington students are admitted without examination because of satisfactory previous records.

CLASSIFICATION

IN THE UPPER FORMS a boy is classified according to the units he has earned for college entrance.

Boys are classified, as far as entrance to any particular form is concerned, on the basis of previous records and, if necessary, on the results of entrance examinations.

GRADUATION REQUIREMENTS AND COURSES OF INSTRUCTION

STUDENTS in the Huntington School are obliged to meet certain requirements in regard to length of time in attendance, scholastic standing, and course of study, before a diploma can be awarded.

THE HUNTINGTON SCHOOL DIPLOMA

TO GET the Huntington School diploma students must earn fifteen units in subjects acceptable for entrance to college. These units may vary in subject content depending upon the type of college chosen. At least eight of the fifteen units must be completed in the Huntington School. This applies to all students regardless of the number of years in attendance. A student must be in attendance for at least one year or its equivalent. For example, it is possible for a student to earn eight units by attending the second semester of a school year plus the summer term or the summer term and the first semester of the succeeding year. A unit is given for each subject taken five periods a week throughout the school year or the equivalent thereof, except that four years of English are counted as three units.

COLLEGE ENTRANCE UNITS

FIFTEEN UNITS are required by most colleges for entrance. Each year the Huntington School sends to college several students who do not graduate but who come to us for the purpose of earning sufficient units, in addition to those previously earned elsewhere, so that they can be accepted by the college of their choice.

Since promotion at Huntington is entirely by subjects, the School is in an excellent position to serve those who do not need a full program of study or who do not necessarily need to meet our graduation requirements in order to enter college.

SUBJECTS OFFERED

THE following subjects are offered in the Huntington School:

English, I, II, III, IV
French I, II, III
German I, II, III
Latin I, II, III, IV
Spanish I, II
Arithmetic
Algebra I, II
Plane Geometry
Solid Geometry
Trigonometry
Advanced Algebra
Physics
Chemistry
Biology
American History
Ancient History
Modern European History
Introductory Economics and Business Law
General and Applied Mathematics
Bookkeeping
Mechanical Drawing

ONE-YEAR COURSE FOR HIGH SCHOOL GRADUATES

MANY boys need an additional year of preparation before going to college; some need to strengthen their foundation before attempting college work; some need additional units of certificate grade; and some need intensive preparation for the college entrance requirements. This course has been a very popular one at Huntington and much has been done for boys enrolled in it.

PREPARATION FOR COLLEGE

IN THE HUNTINGTON SCHOOL a boy can be prepared for entrance to any college. The teaching staff is experienced in this field and all courses are arranged with college entrance always in view.

There are three principal methods by which a boy may normally meet the college entrance requirements. These are: (1) By certification; (2) By examination; and (3) By a combination of certification and examination. At the present time the College Board examina-

tions except for the Achievement, Aptitude and Comprehensive Mathematics tests are not given.

A definite statement cannot now be made as to what procedure will be in force in respect to college entrance in the future except that it is certain that much stress will be placed upon the record made by a boy in his college preparatory work and upon the recommendation of his headmaster. This is no time for a boy to enter college, if he expects to succeed there, unless his college preparatory work is strong enough upon which to build a successful career in college.

Obviously, the School wants to do what it can to prepare a boy for the college of his choice, but it cannot guarantee entrance to any particular college. The important thing for a boy to keep constantly in mind is that the better record he makes the better are his chances of entering the college which his parents and he desire.

SPECIAL COURSES

The following special courses are popular in the Huntington School:

(1) A special course in preparation for entrance to technical colleges in which the stress is on mathematical and scientific subjects.

(2) Huntington has for many years offered a special program in preparation for entrance to colleges of Business Administration. In this course there is emphasis on English, Bookkeeping, Law, Economics, etc.

In addition, to meet special needs during the war emergency, the following adaptations of programs have been made:

(1) In each semester of the school year some senior and junior subjects are fully completed. What these subjects are will be determined by the demand. This is of advantage to boys who need additional units for entrance to college at mid-year or in June.

(2) Saturday morning courses will be offered in the following college preparatory subjects provided sufficient students enroll for them: Algebra I, Algebra II, Plane Geometry, Solid Geometry, Trigonometry, Physics and Chemistry. These courses are open to boys and girls. They continue through the year and carry full college preparatory credit.

TEACHER QUALIFICATIONS

PREPARATION FOR COLLEGE requires teachers who are not only especially trained but especially adapted for such work. In Huntington no teachers are engaged with less than five years of experience in the college preparatory field and certainly all on the staff understand the problems which most boys must face and solve if the college entrance situation is to be satisfactorily met. All teachers in Huntington are men who have been selected because of a demonstrated ability to work with boys.

PARENT-TEACHER CO-OPERATION

PREPARATION FOR COLLEGE when best accomplished requires co-operation from all persons involved; namely, the boy, his parents, his teachers, and the college Directors of Admission. At various periods throughout the year, Parent-Teacher meetings are held. These meetings afford opportunity for the discussion of mutual problems. The Headmaster is always available for interviews with parents.

HUNTINGTON A RECOGNIZED SCHOOL

THE SCHOOL is recognized by the leading colleges. It is a member of the New England Association of Colleges and Secondary Schools and the Private School Association.

The School has full certification privileges as granted by the New England College Entrance Certificate Board. The School has a Cum Laude Charter.

TEXTBOOKS AND COURSE CONTENT

ALL textbooks and other material used as aids to teaching are carefully selected and arranged with college entrance requirements always in view.

Boys who understand and master this material should be well prepared to attain a creditable record in college.

In the Huntington School a great deal of attention is devoted to fundamental work so that a boy will build a good foundation for future work in advanced subjects.

All work here proceeds logically and in proper sequence.

SCHOOL POLICIES

HOURS OF ATTENDANCE

THE SCHOOL is in session five days each week. Attendance on Saturday mornings may be required of students who need supplementary instruction, who are behind in their work, or who are called back for disciplinary reasons.

The daily hours of attendance for boys in the Senior School are from 9.00 A.M. until 2.15 P.M. Recreational and extra-curricular activities are held after 2.15. Boys in the Intermediate group remain until 3.45 except on Fridays, when they are dismissed at 2.15.

The Schedule for the Intermediate group is as follows:

9.00 — 9.15	Assembly
9.15 — 12.15	Recitations
12.15 — 12.45	Lunch
12.45 — 1.30	Recitation
1.30 — 3.00	{ Physical Training, Games, etc., at Huntington Field every day except Friday during the fall and spring. During the winter this period is used for Play Activities in the Johnson Memorial Gymnasium and the Swimming Pool, and for Club Activities, etc.
3.00 — 3.45	Study Period

EXAMINATIONS

EXAMINATIONS are held at the close of each semester. Boys who fail in examinations must make up the deficiency within a reasonable time or enter a lower Form in the subjects in which they have failed. Unexcused absence from an examination means failure in the course.

MARKING SYSTEM

THE FOLLOWING is the marking system used by the School:

- A 90% to 100%
- B 80% to 90%
- C 70% to 80%
- D 60% to 70% (unsatisfactory)
- F Failure
- Inc. Incomplete

A is a mark of high distinction and is given to a student whose work approaches perfection, or it may be considered as a grade representing approximately the best that may be expected of a student.

B is given for work plainly above the average. Students who are to succeed in the best colleges should be able to attain this grade consistently.

C is given for average work. The standards of the School are such that students obtaining some C grades with a majority of B grades or better may expect to succeed in many colleges and will be recommended for entrance to many institutions not requiring B grades for certification.

D is given for work that lies between passing and absolute failure. It is often given to inform the student that by increased effort, he may place himself in the C group and then be in a position for even greater rewards. D does not count for diploma credit.

F indicates failure and requires repeating the subject.

Inc., meaning Incomplete, is given for work which may be ranked later as a result of make-up work or examinations.

TESTS

THE SCHOOL recognizes the need of having its students become accustomed to frequent testing. Entrance to college often requires ability to pass difficult examinations and successful progress in college is quite likely to depend upon one's ability to meet test situations satisfactorily. The School believes that a student can overcome the fear and nervousness incidental to taking examinations by being frequently tested. Short examinations are given often in all classes.

REPORTS

REPORTS of the boys' work are sent home frequently. Work missed for any logical reason is marked "incomplete" until made up, when the grade obtained in making up the work is substituted. Absence from an examination without a satisfactory excuse means a failing grade (F) in the course.

PROMOTION BY SUBJECTS

PROMOTION BY SUBJECTS rather than by classes is the ideal way to build up a good foundation for success in college. Why, for example, should a boy proceed with Algebra II until he has mastered to a reasonably successful degree Algebra I?

Promotion by subjects requires a flexible schedule and a larger teaching staff than would be necessary in the usual situation. The Huntington School, realizing its responsibilities as they concern the preparation of boys for entrance to and especially for success in college, offers a schedule which can usually meet any need of those desiring college entrance units.

Graduation from the Huntington School and entrance to the great majority of the colleges requires evidence that fifteen units have been satisfactorily completed. This is a reasonable requirement. No student could expect to succeed in college unless he is capable of meeting it.

REGULATIONS

THE CO-OPERATION of all parents in the enforcement of regulations is requested. Each boy is expected to be punctual in his attendance at every school exercise. Dismissing a student before the close of the school day interferes seriously with the school routine and with the student's advancement. Only in case of unusual urgency should such requests be made. Outside appointments should be made at a time when they do not interfere with the school work.

When a boy is entered in the School it is understood that his attendance is controlled by the School. Absence from school except for sickness will result in inconvenience to the student.

The School does not seek to enroll students who require severe restrictions. The right is reserved by the School to dismiss any boy whose conduct, influence, industry, or progress is unsatisfactory in the judgment of the Headmaster.

DETENTION

THE SCHOOL reserves the right to detain students after the regular hours, or on Saturday, to make up back work, for tardiness, or for disciplinary reasons.

HONORS AND AWARDS

SCHOLARSHIP HONORS

THREE GRADES of honors for scholarship are conferred at the end of each grading period: "Highest Honors" upon all boys who have maintained a rank of A in all courses; "Honors" upon all boys who have not received a rank lower than B in all courses; "Honorable Mention" upon all boys who have received an average of B in all courses.

SCHOLARSHIP AWARDS

SCHOLARSHIP MEDALS are awarded at Commencement to the students in the School who maintain the highest rank during the year.

THE ALBERT WALTER SWENSON MEMORIAL MEDAL

ESTABLISHED in 1929 by Mrs. Swenson in memory of her husband. Mr. Swenson for nine years served the School faithfully as Head of the Modern Language Department and for two and a half years as Associate Headmaster. Awarded for excellence in French III.

THE CLASS OF 1928 MEDAL

ESTABLISHED in 1928 by the graduating class of that year. Awarded at Commencement to the member of the Senior Class who excels in English.

THE RICHARD JOHN CARROLL MEMORIAL MEDAL

ESTABLISHED in 1928 by the parents of Richard John Carroll, a graduate of the School in 1927 and president of his class. Awarded at Commencement to the student in the Junior Class who excels in English Composition.

THE ARTHUR STANTON CARLETON MEMORIAL MEDAL

ESTABLISHED by the parents of Arthur Stanton Carleton in 1930, the year in which Arthur would have graduated from the Huntington School had he lived. Awarded each year to the member of the Intermediate School whose play, spirit, and character have best maintained the traditions of the School.

THE ALBERT WALTER SWENSON PUBLIC SPEAKING MEDAL

ESTABLISHED in 1929 by friends of Mr. Swenson from the student body and alumni of the School. Awarded to the winner of the Public Speaking Contest.

CUM LAUDE SOCIETY

THE HUNTINGTON CHAPTER of the Cum Laude Society was established in 1928. This is a national honorary society which in preparatory schools corresponds to the Phi Beta Kappa Society in colleges. It is a distinct honor to be elected to membership in the Society. Each chapter has the privilege of electing to honorary membership full-time members of the instructing staff.

Each chapter may elect as members those students of the highest class in any academic course who have had an honor record up to the time of election and stand in the first fifth of the class, choosing the whole number at the end of the school year, or not more than a tenth of the class at any time during the year and the remainder at the end.

EXTRA-CURRICULAR ACTIVITIES

THE SCHOOL sponsors several extra-curricular activities. These vary somewhat from year to year, depending upon the desires of the student body. Generally, we have a Public Speaking Group, a Literary Club, a Chess Club, a Current Events Club, a French Club, a Science Club, a Glee Club and Orchestra. The School publishes a paper called *The Huntington Record*, and a number of boys are on the staff of this publication. Many boys find an interest in the Huntington Forum.

PHYSICAL EDUCATION

PHYSICAL EDUCATION may be defined as the process of developing the body in the right way. The policy of physical training in the Huntington School is a broad one. We are not concerned exclusively with bodily development but rather with general development. Accordingly we believe that the by-products of games and sports are of great importance. To secure the greatest benefits from a program of physical training the various squads must be under the direction of men who, because of what they are and because of their leadership, provide valuable character training.

Play is just as much an essential part of any school program as study provided it is properly supervised. A well-balanced program of physical education invariably does much to increase efficiency in the classroom. We urge all boys to take advantage of the opportunities here for athletic activity. The School has exceptionally well equipped facilities for athletics.

SPORTS

MANY DIFFERENT SPORTS are offered each season; such as, during the fall, football, track and tennis; during the winter, track, basketball, skiing and swimming; and during the spring, baseball and tennis. Each sport is directed by an experienced coach.

FINANCIAL

THE TUITION RATE for students enrolled in a regular schedule (four or more subjects) is \$450.

The usual method of payment is as follows:

Two fifths upon entrance
Two fifths December 1
One fifth February 1

Parents may, if desired, arrange to make tuition payments upon some other basis than here outlined, but in any case a student cannot be enrolled until the first tuition payment has been made. Special arrangements can be made by consulting the headmaster.

NOTE: In spite of rising costs, especially for materials, the School will maintain its basic tuition rate (\$450) for the year 1943-44. Many schools are increasing tuition rates.

REGISTRATION FEE A registration fee of \$5 is due from all new students when a place is reserved. When once paid, it will not be refunded. When an applicant enrolls in the School, it is understood, unless otherwise specified, that he enrolls for the entire year.

SPECIAL STUDENTS Because of the flexible schedule in the Huntington School those who so desire may generally enroll in separate subjects. Students so enrolled, provided not more than three subjects are pursued, are classified as special students. The rate is \$125 per subject.

SATURDAY MORNING COURSES There is a special rate for Saturday morning courses of \$50 for each course plus the \$5 registration fee. Each class period is two hours in length and there are 30 meetings. No student can take more than two courses.

CHEMISTRY PHYSICS A laboratory fee of \$10 is charged all students taking either Chemistry or Physics. These fees are payable on December 1.

MECHANICAL DRAWING	A fee of \$5 is charged all students taking Mechanical Drawing. This fee is payable on December 1.
BULEPRINT READING PRACTICAL MATHEMATICS	Beginning in October Saturday morning courses will be offered in Blueprint Reading and Practical Mathematics. Each course will last for 15 weeks; each class session will be two hours in length. The courses are open to boys and girls. Tuition is \$25 for each course.
BOOKS AND SUPPLIES	All students buy their own books and supplies. This material can be purchased from the North-eastern University Book Store.
GRADUATION	All students graduated from the School are charged a graduation fee of \$10. This covers the cost of diploma and expenses incidental to graduation. All financial obligations to the School must be met before a diploma can be awarded or credit given for work completed in the School.
CHARGES FOR MEDICAL ATTENTION	<i>The School will not assume responsibility for injuries received or for expense incurred because of necessary medical attention in connection with participation in athletics.</i>
REFUNDS	The School assumes the obligation of carrying the student throughout the year. Instruction and accommodations are provided on a yearly basis; therefore no refunds are granted except in cases where students are compelled to withdraw on account of personal illness. Boys who may be obliged to withdraw from the School to enter military service will be charged on a pro-rata basis.
STUDENTS' TICKETS	Students who live in suburban towns can secure railroad tickets at greatly reduced rates by applying at the office of the railroad. Students of the School are permitted to ride on the Boston Elevated on payment of one-half fare.

REFERENCES

APPLICANTS for admission to the Huntington School must furnish the names of two persons, not relatives, who are able to vouch for the character and ability of the student and the financial responsibility of the parent.

The School is always pleased to refer those who inquire to parents, alumni, or educators, who are thoroughly familiar with the work of the School. Names and addresses will be furnished upon request.

Most of our students come to us through the recommendation of former students, their parents, and college deans.

HUNTINGTON SUMMER SCHOOL

EACH year, the School conducts a Summer Session beginning about the first of July and ending about the first of September.

The Huntington Summer School was established in 1912 and since that time has prepared a large number of students for entrance to the New England colleges and others outside this area.

The aim of the School is to provide tutoring and class instruction for those who are conditioned in grammar school, high school or college entrance subjects; for those who wish to complete a four-year high school course in two years and three summer sessions, and for those who wish to make special preparation for college entrance examinations.

The program of work includes all the courses accepted for admission by colleges, together with work usually given in the eighth grade.

The teaching force is made up of the men of the regular school faculty.

The Summer Session is co-educational and for that reason offers courses accepted for entrance to Schools of Nursing, Schools of Music, etc.

The classes are small. The program of work is so arranged that a year's work in each subject is completed during the Summer Session. Students who elect work which they have not before attempted usually pursue only one or two courses. Those who are reviewing are limited only to the amount of work that they can do well.

CHARGES

The rate of tuition in the Summer School is as follows:

One subject	\$ 50.
Two subjects	\$ 90.
Three subjects	\$120.

TUITION is not refunded because of withdrawal or change of schedule. A laboratory fee of \$10 is charged all students taking either Chemistry or Physics. These fees are payable on August 1.

Each student pays a registration fee of \$5 in addition to the

tuition. Fees are not refunded in case of withdrawal. All fees are in addition to the regular tuition charge.

The charge for individual tutoring is \$2.50 an hour.

Three-fifths of the tuition is due upon entrance, plus the registration fee. The balance, including laboratory fees, is due on August first.

A special circular of this School will be forwarded upon request.

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

HUNTINGTON is primarily a day school and because of this most of the boys in the school come from towns and cities within commuting distance. Because of the ease with which the school is reached by automobile, train, and trolley, each year finds boys enrolled from not less than fifty towns within a forty mile radius of Boston. It is true, of course, that a large number of our student group live within the confines of Greater Boston. Such towns as Arlington, Brookline, Cambridge, Dedham, Lynn, Malden, Medford, Medway, Melrose, Milton, Natick, Needham, Newton, Somerville, Stoughton, Taunton, Waltham, Wellesley, Winchester, and Woburn are, however, the homes of many of our boys.

Several boys come to the school from a distance. For such, satisfactory living conditions are arranged, usually in private families.

EDUCATIONAL INSTITUTIONS WHICH HUNTINGTON GRADUATES HAVE ENTERED IN RECENT YEARS

Amherst College	Penn. State College
Babson Institute	Princeton University
Bard College	R. C. A. Institute
Bates College	Rensselaer Polytechnic Institute
Boston College	Rhode Island State College
Boston University	Roanoke College
Bowdoin College	St. John's College
Brown University	Springfield College
Clark University	Stockbridge School
Colby College	Syracuse University
Colgate University	Temple University
College of William and Mary	The Citadel
Columbia University	Tufts College
Cornell University	U. S. Coast Guard Academy
Dartmouth College	U. S. Military Academy
Duke University	U. S. Naval Academy
Fordham University	Union College
Harvard University	University of Alabama
Hobart College	University of Colorado
Holy Cross College	University of Connecticut
Lehigh University	University of Illinois
Lowell Textile Institute	University of Maine
Mass. College of Pharmacy	University of Miami
Mass. Institute of Technology	University of Michigan
Mass. School of Optometry	University of New Hampshire
Mass. State College	University of North Carolina
Michigan State College	University of Notre Dame
Middlebury College	University of Pennsylvania
Middlesex University	University of Southern California
N. E. Aircraft School	University of Texas
N. E. Conservatory of Music	University of Vermont
Nichols Junior College	Virginia Military Institute
North Carolina State College	Washington and Lee University
Northeastern University	Wesleyan University
Norwich University	Western Maryland College
Oberlin College	Williams College
Ohio State University	Worcester Polytechnic Institute
Parks Air College	Yale University
Penn. Military College	

GENERAL SCHOLARSHIP FUND

THE SCHOOL over a period of years has helped many a boy secure an education, which he would not otherwise have had, by granting him scholarship assistance and at a time when he was greatly in need of it. There are today and will continue to be many worthy boys who have the ability to succeed in college work and who should have the opportunity to do so. This opportunity cannot become available to them in a school such as Huntington unless a reduced tuition rate is made.

The purpose of the General Scholarship Fund is to accumulate sufficient funds to take care of the difference between the regular tuition and special tuition rates granted. Obviously, the larger the fund the larger the number of worthy young men helped.

We shall deeply appreciate contributions from any who would like to assist in making it possible for ambitious boys of good character and ability to get needed college preparatory training. Any amount, no matter how small, will be gratefully received. Checks should be made payable to the Huntington School.

HUNTINGTON SCHOOL FOR BOYS

APPLICATION FOR ADMISSION

Applicant's full name

(First Name)

(Middle Name)

(Last Name)

Home address

Date of birth

Place of birth

Father's name

Father's occupation

Business address

Home telephone

Business tel.

Religious preference

Condition of health

College you wish to enter

When?

Jr. High School attended

High School attended

Name and address of two persons not connected with your family,
to whom we can refer.

Name

Address

Name

Address

Date

Signed

Parent or Guardian

NOTE: A registration fee of \$5.00 must accompany this application.



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